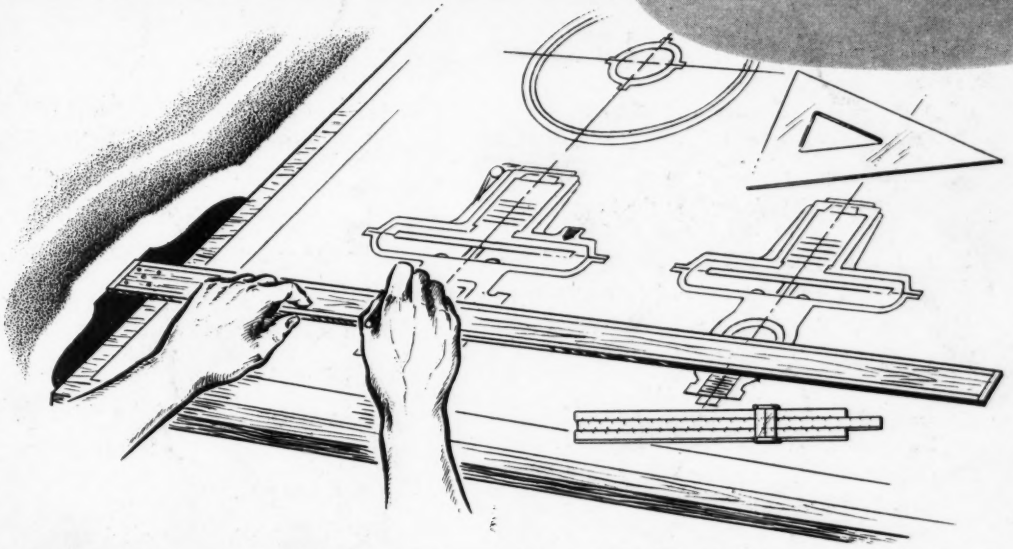
GAS

ENGINEERING • UTILIZATION • LOAD BUILDING • MANAGEMENT

JAN 16 1

THINKING ABOUT TOMORROW ?

WE ARE



THE wonders of tomorrow will come from the germ of today's genius. Under the feverish pressure of war, developments are taking place that, in less strenuous times, might have required years to realize. Already, technically speaking, our pre-Munich world is an antiquity. The Gas World of tomorrow, too, will benefit from the effects of this precedent shattering impulse.

The Engineering, Research and Development Departments of the Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company are thinking ahead of the times. On the drawing boards new designs are taking form. In the laboratories experimental models are being put through their paces. With the Victory and a return to normal times, the results of today's research will be apparent in tomorrow's EMCO Gas Meters, EMCO Regulators and Nordstrom Lubricated Plug Valves.

PITTSBURGH EQUITABLE METER COMPANY

NEW YORK · BROOKLYN · DES MOINES · MEMPHIS · OAKLAND · TULSA · CHICAGO · BOSTON

MERCO NORDSTROM VALVE COMPANY
Main Offices, Pittsburgh, Pa.
NATIONAL METER DIVISION, Brooklyn, N. Y.

KANSAS CITY · PHILADELPHIA · SAN FRANCISCO · LOS ANGELES · SEATTLE · HOUSTON · COLUMBIA · BUFFALO

ORY
UY
ITED
ATES
AR
ONDS
AND
AMPS

EMCO NORDSTROM

GAS CONTROL

PROVED BY ACTUAL FIELD INSTALLATIONS

At every point—beyond every meter—there is a potential hazard of loss and service expense if your regulators are not absolutely reliable.

The efficient operation of Reliance Regulators has been proved by actual field installations. For over 33 years Reliance engineers have worked with operating men in the field. These years of engineering research in the field and laboratory control under actual field conditions have perfected a complete line of regulators that are unexcelled in efficiency, durability and performance.

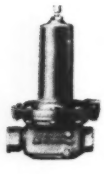
Reliance Regulators are made in types and sizes most needed in all branches of the gas industry—distribution, industrial, domestic—for natural, manufactured and liquid petroleum gas.

Current bulletins include all improved types of Reliance Regulators together with much valuable information on capacities and scientific gas control. Send for your copy today.

AT ANY POINT IN THE LINE

Reliance CBV Regulators in the offset connected series are fitted with hand holes that provide easy accessibility to valves without removing the Regulator from the line.

Reliance Type HPH Regulators are recommended for small industrial installations where sensitive control and positive lock-up are required.



Reliance Type HPR Regulators are for high pressure installations. Inlet pressures up to 1000 pounds are safely handled with outlet pressures ranging from 2½ to 200 pounds.

Reliance Type H and K Regulators are recommended for domestic and industrial service. Spring or weight loaded models can be furnished with mercury seal, internal mechanical relief valve or automatic shut-off valve as desired.

Send for Bulletins

RELIANCE REGULATOR CORP.

1000 MERIDIAN AVENUE ALHAMBRA, CALIFORNIA

AMERICAN METERS

AMERICAN METER CO EST 1836

RELIANCE

RELIANCE REGULATORS

U.S. cast iron PIPE

S. PIPE & FOUNDRY CO.
eral Offices: Burlington, N. J.
nts and Sales Offices throughout the U. S. A.

By metallurgical controls and analysis of raw materials, we know the *physical characteristics* of the iron used in making Super-de Lavaud Pipe. The pipe is cast centrifugally in a metal mold and heat treated to increase toughness and assure uniformity of metal structure. The finished pipe is subjected to a regularly scheduled series of rigid tests. By these methods and controls, a high standard is attained and maintained—of metal strength, ductility and impact-resistance.

Lithographed on stone by Edward A. Wilson for U. S. Pipe & Foundry Co.

Advertisers

American Brass Co.	—
American Meter Co.	12
American Recording Chart Co.	38
Blaw-Knox Co.	9
E. D. Bullard Co.	46
Burrell, George A.	48
Carbide & Carbon Chemicals Corp.	—
Cast Iron Pipe Research Ass'n	6, 7
Chaplin-Fulton Manufacturing Co.	37
The Cleveland Trencher Co.	45
Connelly Iron Sponge & Governor Co.	39
The Cooper-Bessemer Corp.	—
Cribben & Sexton Co.	—
Dearborn Chemical Co.	—
Dresser Manufacturing Co.	5
Fisher Governor Co.	—
The Fluor Corp., Ltd.	3
General Controls	—
Greenlee Tool Co.	36
Jos. Greenspon's Sons Pipe Corp.	48
H-M Regulator Co.	34
H-M Thermo Control Co.	34
Handbook Butane-Propane Gases	43
Ingersoll-Rand	—
Johns-Manville	41
Jones & Laughlin Steel Corp.	—
Kitson Co.	48
Merco Nordstrom Valve Co.	—
Milwaukee Gas Specialty Co.	46
Minneapolis-Honeywell Regulator Co.	Third Cover
Mueller Co.	45
National Tube Co.	—
Natural Gas Odorizing Co.	
Pacific Coast Gas Association	32
Pacific Gas & Electric Co.	33
Pacific Meter Works	12
Payne Furnace & Supply Co., Inc.	40
Pittsburgh Equitable Meter Co.	Front Cover
Reliance Regulator Corp.	Second Cover
Republic Steel Corp.	—
Reynolds Gas Regulator Co.	41
Geo. D. Roper Corp.	—
The W. J Schoenberger Co.	—
Semet-Solvay Engineering Corp.	44
Sharples Chemicals, Inc.	Fourth Cover
A. O. Smith Corp.	35
Spencer Thermostat Co.	42
Sprague Meter Co.	10
Union Carbide & Carbon Corp.	—
U. S. Pipe & Foundry Co.	1
United States Steel	—
Vulcan Proofing Co.	8
John Zink Co.	4

GAS

REG. U. S. PATENT OFFICE

Nineteenth Year of Publication

Contents for January, 1943

GUEST EDITORIAL: Answers to an Important Question on Utility Advertising.....*By Davis M. DeBard* 11

Thermally Thinking.....*By Elliott Taylor* 13

Gas at War..... 15

Washington Notes; Ickes Power Increased; Gas-Driven Boats; Servel Saves Minutes; Conservation of Materials; Fat Salvage; Government Manual Issued; Conservation Booklets; OPA Price Bulletins.

FEATURE ARTICLES

How the Industry Served in 1942.....*By Arthur F. Bridge* 18

LP-Gas Industry Gains Despite War..... 20

Consumers Power Co. Natural Gas Changeover..... 21

Ohio Fuel Gas Co. in a War Role.....*By James E. Humphreys* 23

Radio and Newspaper Prove Their Value in Informing Customers During Gas Outages....*A Report from Frank R. Jamison* 27

Oil Compact Commission Holds Winter Meeting....*By O. D. Hall* 29

DEPARTMENTS

People ..... 36 Abstracts 40

Obituaries ..... 38 Products..... 46

Publication Office: **LOS ANGELES, 1709 West Eighth Street, DRexel 4337.** ***Branches:*** **DALLAS, 3645 Haynie Avenue, Justin 8-1764. CHICAGO, 1064 Peoples Gas Building, HARrison 6634. Washington Editorial Office, 850 Munsey Building. Phone: District 2118.**

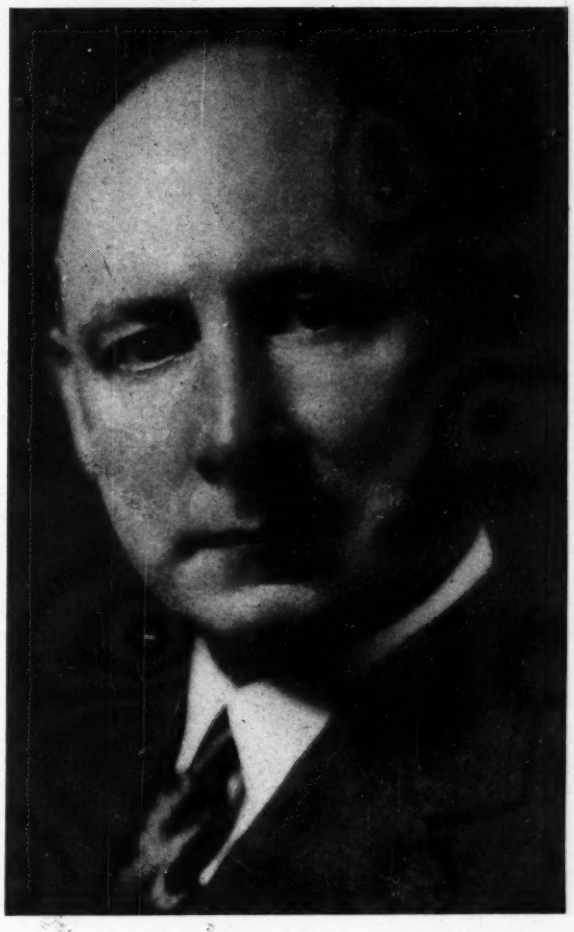
JANUARY, 1943. Volume XIX, Number 1. *GAS* is published monthly by Western Business Papers, Inc., at 1709 West Eighth Street, Suite 320, Los Angeles, California. **JAY JENKINS,** President and General Manager; **CRAIG ESPY,** Vice President; **ARTHUR ROHMAN,** Vice President and Managing Editor; **JAMES E. JENKINS,** Secretary-Treasurer; **GUY CORFIELD,** Technical Editor; **J. BREWER AVERY,** Research Editor; **ELLIOTT TAYLOR,** Washington Editor, Suite 850 Munsey Building, Washington, D. C.; **PAUL LADY,** Advertising Manager. Subscription price: United States, Mexico,, Cuba, South and Central American countries (in advance), 25 cents the copy; two years for $3.00, $2.00 per year; all other countries, $3.00 per year. Entered as second class matter August 20, 1936, at the post office at Los Angeles, Calif., under the Act of March 3, 1879. *Member:* Audit Bureau of Circulation; Associated Business Papers, Inc. *Publishers:* BUTANE-PROPANE *News;* HANDBOOK BUTANE-PROPANE GASES.

GUEST EDITORIAL

Answers to an Important Question on UTILITY ADVERTISING

By DAVIS M. DeBARD

Vice President, Stone & Webster Service Corporation, New York City



What would be the effect on a public utility company of cessation or drastic curtailment of regular advertising for the duration of the war?

English Answer: The answer must depend upon circumstances. The cessation or drastic cut of regular advertising will certainly be much less serious for a public utility than for a branded article. The point to be borne in mind is that a truce between competitive fuel industries during the war in England does not necessarily mean that they will occupy the same relative positions in public estimation at the end of the war as those which they occupied at the beginning.

Because a public utility company usually holds a monopoly, the public tendency is to assume that the company is exploiting that monopoly at the expense of the public. An individual when dealing with a concern feels rather small and often his only contact is a rather peremptory demand for payment and threatening notice that unless he pays, his supply will be cut and he will have to pay something extra to have it re-connected. All this means that the utility should, at all times, try to break down the distance between supplier and consumer and make the customer feel that he, as an individual, matters and is important. If this is vital in peacetime, it is of even greater importance in wartime, and the utility should continue to improve through its advertising the relations it has with its customers.

A cessation or drastic curtailment of regular advertising for the duration of the war would undoubtedly mean that the utility lost track with its public.

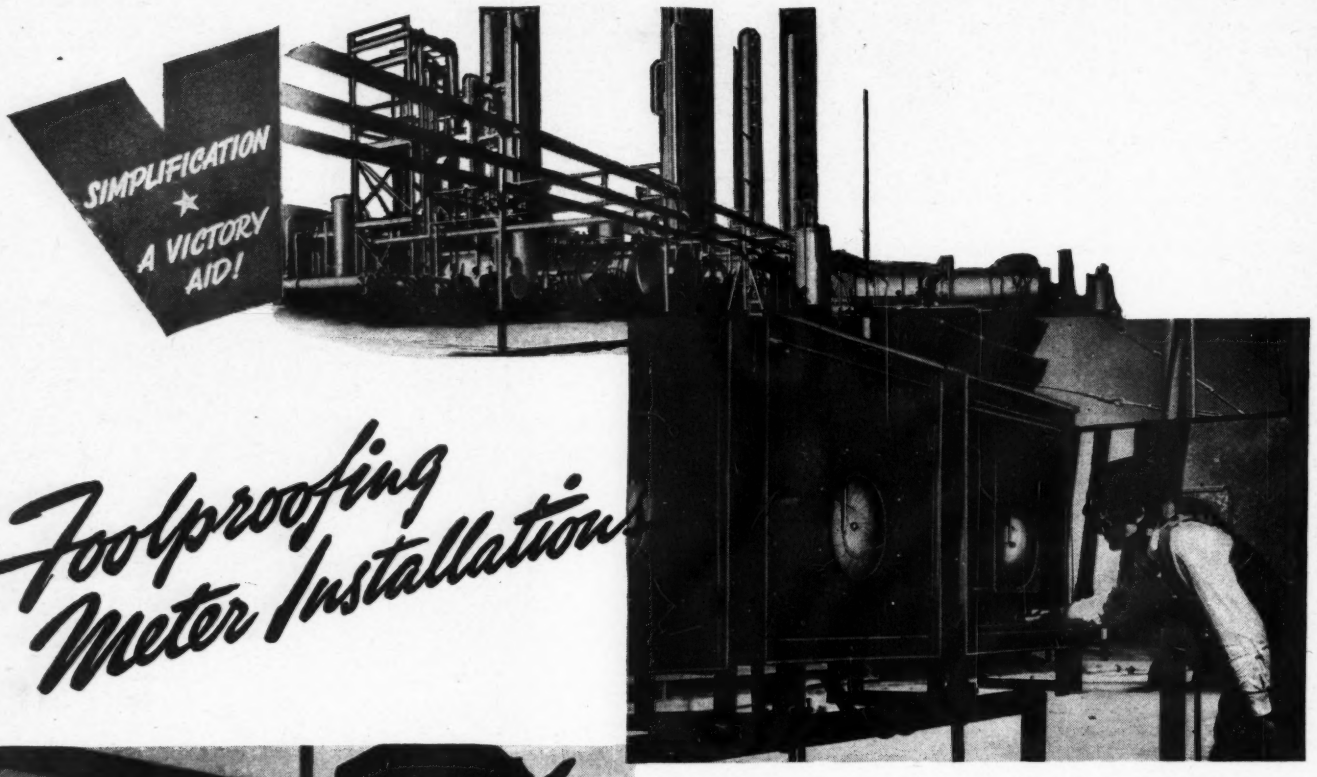
American Answer: Cessation of utility advertising for the duration of the war would be a deliberate sabotage of the investment built up during normal times. It can no more be stopped than a person can stop breathing and expect to survive. Any utility company which crawls into its shell and ceases to interpret itself to the public during a period of war is inviting the inevitable—serious impairment of prestige, political attack and all the other ills associated with a policy of silence. Recent published data indicate that companies which dropped advertising in 1914-1918 suffered severely n the post-war period and some nationally known companies passed out of existence.

The public utility has the responsibility not only to its stockholders, but to its employees, its customers, and the entire national economy as well. This responsibility necessitates that it so conduct its advertising activities during th war that it will survive the peace.

Advertising is not out but, on the contrary, is face to face with the biggest and the most important job of all time—that of selling this war to the people of the democracies of the world.

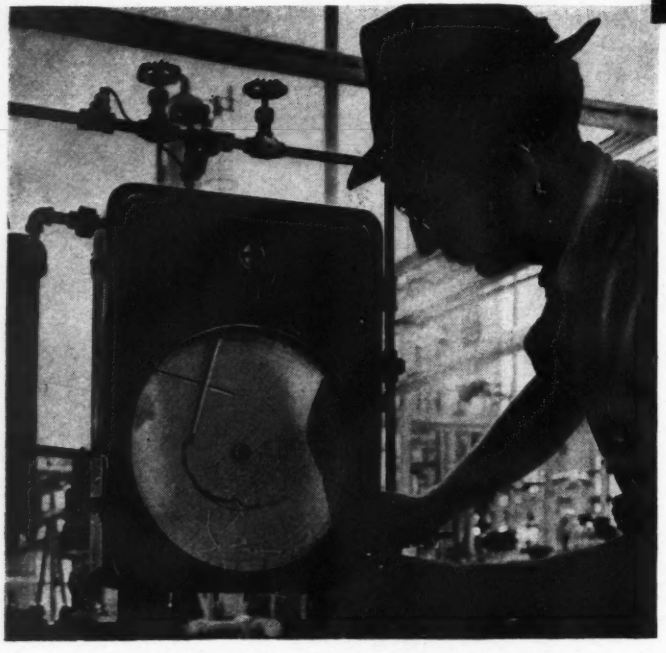
Advertising that incites non-essential buying and increases consumption is not in good taste, but advertising used as an educational force so that it will mold public opinion and guide people to a greater war effort is the need of the hour.

There is no question that the system of free enterprise, commonly known as the capitalistic system, must be given full credit for the tremendous productive accomplishments of this war period. It would be a mistake and a lack of patriotism if the representatives of this system, of which the utility is a part, did not keep the public fully informed as to their contribution to this war effort.



Foolproofing Meter Installations

Measuring incoming gas by Metric-American orifice meters, in housings.



Metric-American orifice meter at natural gasoline plant.

INSTALLATION WORK is simplified...first, by determining the strategic points that will establish best location and most effective positioning ... and then by installing, for quick connecting, Metric-American meters, flowmeters or control instructions.

The result is an efficient installation job ... trim and sealed ... down to the last detail.

Weatherwise engineering that goes into the construction of American instruments enables them to withstand abuse out in the field, without endangering accuracy; although today's well-designed production shelters give easy access to meters for inspection, adjustment and cleaning.

Preventive maintenance starts with correct installation, followed by periodic inspection. It is urged advisedly today ... even for instruments with Metric-American stamina.

METRIC METAL WORKS • ERIE, PENNSYLVANIA

AMERICAN METER COMPANY

INCORPORATED (ESTABLISHED 1836)

MEASUREMENT ENGINEERING AND PROCESS CONTROL

A study, from time to time, of the Metric-American "Reprint from Handbook E2" on installation and operation of orifice meters, will repay you.

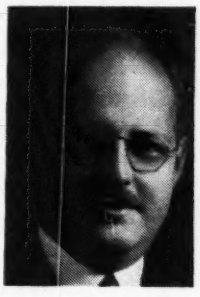
1933

THERMALLY THINKING

By ELLIOTT TAYLOR, Washington Editor

Manpower Problem

THE manpower problem has been temporarily resolved, at least with the concentration of control under McNutt. Thirty-eight years instead of 45 appears to be the new age limit for induction into the armed services. This should add up to some benefits for the gas industry, as very few men can honestly be considered irreplaceable who are much under that age. It also is apparent that for the time being, and possibly as long as the war lasts, married men with children will be deferred.



Elliott Taylor

The Manning Tables plan of rating companies and their employees for purposes of draft deferment is designed for use of war industries, and for essential civilian industry which includes the gas utilities. The requirement on the part of the company is that it make application for a Manning Tables, which are to be filled out and filed with the state selective service director. Once a company's table is accepted it receives an acceptance number which is tantamount to deferment for all employees whose individual occupations are rated high enough in the occupational classifications.

Since good men are scarce and getting scarcer, this does not mean that manpower problems will be ended for the utilities. They will in fact become even more severe in all probability, and it behooves every individual company to take what steps it can to meet the situations that will arise.

One of the obvious steps that the gas utilities should already have under way includes the hiring and training of replacement personnel from the classes of workers that are not likely to be called for military service. These include partially disabled men of all ages, able-bodied men over 38, and women. Married men within the draft age who are supporting one or more children will probably not be called, at least until war casualties have made terrific inroads on the existing and recruiting army.

Washington press releases indicate a growing attitude of belligerent solicitude on behalf of the negro in industry. War manpower control has a Fair Employment Practices Committee which concerns itself with this problem of racial discrimination. One utility has already been ordered in effect to get more negroes on the payroll. The sensible thing for gas companies to do is to eliminate any formal questions having to do with race or religion from employment application blanks. And under the present state of affairs, extra care should be used to see that any negroes who are hired are paid the same wages, given the same privileges and recognition as are white workers of equal skill and ability.

Not to be overlooked in this connection is the growing potency of the United States Employment Service as the agency that may one day not only dictate hiring but firing of employees as well. The USES has grown from its one-time status of custodian of the names and addresses of incompetents into the only national index of the qualifications of thousands of types of skilled, semi-skilled and unskilled laborers. Even though personnel managers of the gas utilities may feel themselves better qualified to go out and find their own help, they will do well to utilize this government service now, so that they may be acquainted with its personnel and its methods, and so that the industry's manpower needs may be consistently in the forefront of attention.

■ ■

The Month

Winter Problem: Industrial plants in the Chicago area that are using gas for fuel were ordered the middle of December to start using their standby facilities to full capacity to relieve the load on the natural gas transmission lines and to enable the gas companies to build up a storage to meet a possible shortage when the winter peak hits in January. At this writing it appears likely that the order will be extended to all gas utility industrial customers in areas covered by order L-31. The early winter cold wave that has blanketed the entire East is certain to aggravate the fuel situation, and it now appears that WPB concern over gas supply had its origin in more than the "shortage psychology" that some gas observers have labeled it.

• •

OPC to PAW: The Office of Petroleum Coordinator for War ceased to exist officially Dec. 17, 15 days from the date of the order signed by the President creating in its place, and with newer and broader authorities, the new Petroleum Administration for War.

The net effect of the order—Executive Order No. 9276—is to give Harold L. Ickes the authority of an administrator instead of an adviser in all matters concerning petroleum and petroleum products. Petroleum is defined to mean "petroleum, petroleum products, and associated hydrocarbons, including but not limited to natural gas, except that natural gas which has entered into gas transmission lines from field gathering lines shall not be so included."

Since we are of the opinion that the control and direction of the natural gas industry are in more competent and intelligent hands in what was the OPC (now PAW) than in any other agency or bureau in Washington, we are disposed to see in this new order a step in the right direction. It is true that the administration of order L-31 remains in the Power Branch of WPB, and it is true that the order creating the PAW is so hedged in with restrictions protecting the prerogatives of WPB, ODT and the rubber director that only the government lawyers will be able to trace the exact outer boundaries to which the petroleum administrator's new authority extends.

But it does mean that in matters per-

taining to the construction of new transmission lines, the PAW will now sit in with a hand instead of just kibitzing the game over Donald Nelson's shoulder. Since the Power Branch (newly named the Power Division) of WPB would be helpless to keep the complex fuel demands of the nation coordinated without daily, in fact without hourly, recourse to the technical knowledge, the engineering ability and the factual information that has been assembled by PAW, it is reasonable to assume that more and more of the responsibility and authority will center in the latter offices, where it actually belongs.

From the very outset of our preparation for war, the petroleum coordinator adopted the attitude that in the fuel industries could be found the same high degree of patriotism, the same selfless devotion to the common good that existed among professional political philosophers, with the added advantage of a lot more administrative ability and technical knowledge. The result has been the creation of one of the smoothest functioning, and certainly the most democratically administered agency in all of the government services. Although Mr. Ickes was obliged to front for two of the most unpopular orders to be issued, those of gasoline and fuel oil rationing, he has succeeded in winning the grudging admission of the general public that those orders were inevitable. Leon Henderson of OPA was thrown to the wolves because of coffee and sugar. The essential difference, in our opinion, is that the public respects the man who is tough because he has to be, and it loathes the man who gives the impression of being tough because he loves it.

• •

The Utilities and CMP: The Controlled Materials Plan which came into WPB on the wings of Vice Chairman on Program Determination Ferdinand Eberstadt is lagging behind its schedule and it may be the middle of 1943 before controls announced for the first quarter are fully operative. It is apparent, however, that the utilities are viewed realistically by the new regime as essential industries, and as such will be assured of the materials necessary for the maintenance of plant and distribution systems. Over and above the P-46 preference ratings, which were becoming more and more meaningless as far as getting supplies was concerned, a new system of AA-1 ratings for essential repair and maintenance has been announced. These orders will probably not be available to gas companies upon their own certification, but will have to be passed on by the Power Division after special consideration of each individual case.

The data being accumulated by the various claimant agencies under CMP are being kept secret. But there are indications that in some instances industry representatives are making claims that will redound to the disadvantage of the industry that they are attempting to serve. We have knowledge of one conference in which the amount of a critical material that would be needed for maintenance and repair was put in at a total that represented the average amount that would be required by the heaviest user of this material, instead of the average for the industry as a whole. Since military needs are going to be met first, and inflation applied at the consumers goods end will probably mean that industries pumping up their estimated requirements will get nothing at all while the nigger in the woodpile is being ferreted out.

• •

National Advertising: We commend the National Advertising Committee of the AGA on the new copy slant that has been adopted for the advertisements appearing in the Christmas editions of the national magazines. AGA appears to have learned first what a good many industries will soon get wise to — namely, that the public is more intimately and personally identified with the human beings that are involved in the war than they are with the mechanical equipment that is provided them.

It is particularly gratifying to be able thus to praise the AGA copy, since the insertions in the November issues, regarding which we have sympathetically withheld all comment, hit a new low in insipidness of presentation and irrelevancy between text and illustrations. We refer, of course, to the "Ack-Ack" gem. Perhaps with the dawn of this bright New Year, with its opportunities of greater service for all, we are justified in hoping that the blond babe who has keynoted so much gas copy will find a greater field for her talent in the Waacs or the Waves. Her chronic expression of perpetual amazement at ahe sight of food being prepared on a gas range leads uto the studied conclusion that she is by nature fitted for lighter duty than that of homemaking.

■ ■

Taxes Gone Forever

Basing estimates on current trends, publicly owned electric light and power enterprises in the United States will have gross revenues of approximately $300,000,000 in 1942. This represents about one-ninth of the estimated revenues of $2,650,000,000 to be received by the privately owned utility companies.

Of these revenues of $300,000,000, about $135,000,000 will have been received from sales of residential (or domestic) service and $90,000,000 from retail sales of commercial service. Private companies pay a federal excise tax of 3⅓% on these sales. If this federal excise tax on retail sales of electricity had applied to publicly owned plants, the government would have collected $7,500,000 in taxes in 1942.

Under the new 1942 federal tax legislation, private utility companies this year will pay about $360,000,000, or 13.6% of their gross revenues in income, excess profits and other miscellaneous taxes. If this ratio had been applied to the $300,000,000 revenues of publicly owned plants, the U. S. Treasury would have gained $40,800,000 in taxes during 1942.

As the result of the federal tax exemption of publicly owned power systems, the U. S. Treasury is thus losing $48,300,000 which must either be made up by other taxpayers or else piled up as increased public debt.—Edison Electric Institute.

■ ■

Public Ownership

An interesting commentary on the plight of privately owned utilities with respect to heavy war taxation and the public ownership problem was given on Nov. 12 by R. W. Peterson, chairman of the Wisconsin Public Service Commission. In an address before the National Association of Railroad and Utilities Commissioners at St. Louis, Mr. Peterson asserted that one effect of high war taxes is the "stimulus which they will give to public ownership of utilities."

Private ownership of utilities, he commented, may be one of the casualties, or at least a "shell-shocked" victim of the war. If this is so, he added, "the Revenue Bill of 1942 may be termed a 'task force' to obtain that objective." Declaring that the vast majority of the public has demonstrated repeatedly that it does not favor public ownership of utilities, Mr. Peterson remarked that publicly owned utilities are exempt from many taxes, including federal income and excess profits.

Commenting on the forced "break-up" of holding company systems through the operation of the "death sentence" section of the Holding Company Act, he said that the sales of such properties are virtually limited to public agencies because of high taxes. "Thus indirectly public ownership will be aided and abetted by war taxes."—*New York Times*, Nov. 13, 1942.

GAS at WAR

Washington Notes

A summary of the most important orders issued from Washington during the past month which pertain to the gas utility industry:

Natural Gas (L-31) and Manufactured Gas (L-174): General directive 1 under these two limitation orders issued Dec. 28 prescribes the order in which a utility may reduce deliveries to a consumer having stand-by facilities:

(1) All consumers who have stand-by facilities capable of utilizing coal but only within the limits of the utility's contractual rights;

(2) All consumers who have stand-by facilities capable of utilizing coal, without regard to the contractual rights of the utility or any consumer;

(3) All oil refineries having stand-by facilities of any type, but only within the limits of the utility's contractual rights;

(4) All oil refineries having stand-by facilities of any type, without regard to the contractual rights of the utility or any consumer; and

(5) All other consumers having stand-by facilities of any type, without regard to the contractual rights of the utility or any consumer.

Deliveries to any consumer in the respective classes (a) (2) to (a) (5) shall not be reduced until deliveries to all consumers in prior classes have been suspended. Reductions within any class shall be proportionate in so far as practicable.

This directive does not affect the order in which deliveries are to be reduced to consumers without stand-by facilities.

Advance Approval for Gas Deliveries: In Administrative Letter No. 13, issued by WPB in connection with Limitation Order L-31, advance approval is given by the director general for operations for deliveries of natural gas to non-residential consumers. Approval covers deliveries of gas for the operation of gas-fired equipment, not including space heating or steam generating equipment, which is not entitled to receive deliveries of gas under the amended L-31, with the provision that such deliveries, less the amount granted under former advance approval, shall not exceed in the aggregate 5000 cu. ft. in any one day.

The advance approval as issued in Administrative Letter No. 4 has been revoked but deliveries commenced by any utility following that order may be continued in spite of this revocation.

Maintenance, Repair, and Supplies (P-46): Restrictions on the construction of utility lines to supply gas or electric service to domestic ranges were relaxed on Dec. 16 by the amendment of Supplementary Preference Rating Order P-46-b.

Prior to this new amendment, the owner of a gas range moving into a house equipped for electricity could not have the gas service brought into the house. Neither could an electric range owner, moving into a house equipped for gas, have the electric service provided. However, the amendment permits the utility company to service either a gas or electric range with the required fuel, provided the dwelling is not already equipped with a range of any kind, and the person moving into the house owns the range he is installing.

The connection for a gas range must not require more than 75 ft. of 1¼-in. steel pipe or the equivalent in other sizes.

Domestic Mechanical Refrigerators (L-5-d): A supplementary order was issued Dec. 5 affecting the sale and transfer of domestic gas and electric refrigerators. Such refrigerators may now be sold: (1) upon issuance of a certificate of transfer on Form PD-428 which is secured by written application on Form PD-427; (2) upon proper authorization to the army, navy, U. S. Maritime Commission, War Shipping Administration, Panama Canal; to an ultimate domestic consumer who shall certify that the refrigerator is for his personal use and that he has no other means of domestic mechanical or ice refrigeration at his disposal.

Heating Stoves (L-23-d): In order that coal and wood burning stoves for heating of dwellings, shops, offices and stores may be obtainable by persons needing them to replace fuel oil heating equipment, quotas of Class C producers in the stove industry are temporarily removed under Supplementary Limitation Order L-23-d, issued Dec. 3. This action permits unrestricted use of iron and steel for the purpose by the Class C producers.

Furnaces (L-22-a): After Dec. 31, 1942, the manufacture, fabrication and assembly of steel furnaces is prohibited except upon specific authorization by the director general of operations. Also from and after this date no person shall put into process in the manufacture of replacement parts for steel furnaces in any calendar quarter a greater weight of iron and steel than 200% of the weight of iron and steel used during the corresponding quarter in 1940.

Plumbing and Heating Tanks (L-199): This general order issued Dec. 19 adds gas-fired water heaters to the list of products that will be made this year only for use in war housing or for other war projects. The order restricts production and limits the amount of metal and alloys that may be obtained for the production of tanks. Production of metal tank jackets and metal tank supports is suspended and the installation of metal tank jackets is prohibited with certain minor exceptions. Necessary replacements for civilian use may still be had since inventories of finished equipment are fairly large at present.

Plumbing and Heating Emergency Repairs (PRO P-84): The use of ratings obtained under this order was restricted by an amendment issued Dec. 16. No installer or supplier may apply his rating to obtain copper or copper base alloys which have been fabricated into sheets, wire, rods or tubes, or to obtain any scarce material the use of which could be eliminated without serious loss of efficiency by substitution of less scarce material or by change of design. Materials which are subject to a ration order of the OPA cannot be obtained.

Oil Industry Materials (P-98-c): Sale of heretofore frozen stocks of materials in the oil industry is now permitted by this order issued Dec. 1 upon the recommendation of the OPC. The new order permits the sale of inventory stocks by one oil operator to another oil operator.

All reports required to be filed and all communications concerning P-98-c should be addressed to Office of Petroleum Coordinator for War, South Interior Building, Washington, D. C., Ref.: P-98-c, or Office of Oil Controller, Dominion of Canada, Toronto, Canada, Ref.: P-98-c.

Welding Rods (L-146): The limited control of the distribution of weld-

Speakers at the "kick-off" dinner for the Servel drive for increased war production are shown above. Left to right: Lieut. Rausch, army air forces; N. I. Townsend, secretary and treasurer of Servel, Inc.; Lieut. Comdr. F. G. Healy, U. S. navy; Louis Ruthenburg, president of Servel; W. E. Baker, vice president of Servel in charge of production; August Horstman, president of the Servel Employees Association; and Maj. F. A. Dixon, army air forces resident representative.

ing rods and electrodes effected by General Limitation Order L-146 was abandoned on the issuance Dec. 9 of a revocation of the order.

When intended purchasers of welding rods and electrodes for maintenance and repair work find it necessary to obtain preference ratings, applications for purchases of less than $50 should be addressed to local WPB offices. Where more than $50 worth of material is wanted the applicant should obtain approval from WPB in Washington.

■ ■

Ickes Power Increased

In an effort to centralize war policies and actions of the government relating to petroleum, the President on Dec. 2 announced the establishment of a new agency, Petroleum Administration for War, with Harold L. Ickes as its head. The new office supplants the former Office of Petroleum Coordinator for War which Secretary of Interior Ickes had headed since its inception May 28, 1941. Ralph K. Davies, who has been deputy coordinator, was appointed deputy petroleum administrator in the new set-up.

According to the executive order, Petroleum Administrator Ickes "shall be directly responsible to the President and shall establish basic policies and formulate plans and programs to assure for the prosecution of the war and conservation and most effective development and utilization of petroleum in the United Saates and its territories and possessions, and issue necessary policy and operating directives." This is a broader delegation of war authority than the pre-war responsibility vested in Mr. Ickes as petroleum coordinator which was that he "make specific recommendations to appropriate departments."

The new office will wield a strong influence on the WPB, OPA and ODT, and although it will not have the power to usurp their functions, it may issue and enforce necessary orders and directives regulating all the operations of the petroleum industry. The administrator will also be empowered to disaribute among the companies engaged in the oil industry whatever quantities of critical materials are allotted for the use of the industry by the WPB.

In the foreign field Mr. Ickes will collaborate with the appropriate federal authorities and departments authorized to determine plans and policies concerning foreign petroleum activities and in conformity with these plans and policies issue directives to units of the industry engaged in petroleum operations in foreign countries.

In matters of oil rationing on the home front (except to conserve rubber), Administrator Ickes will set policies, designate areas, amounts and time, but will not handle rationing machinery.

■ ■

Gas-Driven Boats

Gas has virtually "risen to the occasion" in more instances than one since the beginning of World War 2. The latest example of service this fuel is doing is in assisting the people of Holland to augment the meager food supply left them by the plundering Nazis, by driving fishing boats which would otherwise be rendered useless by lack of fuel. A Netherlands newspaper reported that gas generators are to be fitted in the entire fishing fleet at the Dutch port of Ijmuiden. Three Dutch ports have already had the generators installed and it is expected that similar equipment will be utilized in small boats fishing off Scheveningea.

■ ■

Servel Saves Minutes

On the first anniversary of Pearl Harbor—Dec. 7—workers of Servel, Inc., Evansville, Ind., peacetime manufacturers of gas refrigerators, have pledged themselves in writing to speed up production as a tribute to the 500 Servel men now in active service.

Servel men and women working for the war effort on the home front are organized into a war production campaign with the slogan, "Make Every Minute Count." The campaign is headed by a six-man committee of management and employee representatives who meet at regular intervals to discuss ways and means of getting greater production of war essentials. The campaign has the personal endorsement of Donald M. Nelson, chairman of the War Production Board.

A tabloid newspaper, independent of the regular Servel employee paper, is being published, furthering the efforts of the war production drive. The new paper contains current information on the campaign, special bulletins and citations on individual accomplishments.

■ ■

Conservation of Materials

Conservation of fuels and critical materials by the use of substitutes is being practiced extensively by the office of the Los Angeles District Engineer, War Department, under whose jurisdiction millions of dollars are being spent in the construction of military posts and air depots in Arizona, Nevada and Southern California.

The use of substitute materials, in many instances, eliminates the necessity for the District Engineer office to exercise its right to apply for a priority on critical materials. Coal or oil is substituted for natural gas and liquefied petroleum gases formerly widely used for heating in army camps. In certain cantonment units, such as mess halls and hospitals, cast iron has replaced steel in low pressure boilers and radiators used for heating.

Much use has been made of combination brick and tile for high temperature chimney flues instead of steel, aluminum and copper. In the construction of gas-fired boilers and furnaces, thoroughly satisfactory results have been obtained with tile, asbestos cement and lightweight, preformed cement-mortar flues. Substitute flue materials also are being considered for the short stacks at air depots. Wood, rather than steel, has been employed in the con-

struction of oil storage tanks and containers for water softeners. Steel tubing has been proposed as a substitute for copper in air conditioning equipment. Copper plated steel tubes, already adopted by the gas industry, are considered for refrigeration equipment.

Many of these innovations in the use of substitute materials have been utilized by the heating and ventilating section of the Los Angeles District Engineer office. The section handles the design of heating and ventilating distribution systems, and the selection of equipment, and supplies typical layouts for many types of heating, ventilating, refrigeration and air conditioning equipment.

Through cooperation of the heating and ventilating section with contractors and manufacturers of heating and ventilating equipment, ideas and methods are being evolved which are of value not only to the war effort but also to industrial engineers who are confronted with the necessity of revising standard practices of long standing.

The Los Angeles District Engineer office is headed by Colonel Edwin C. Kelton, whose office is at 751 South Figueroa St., Los Angeles.

A.G.A. is offering two series of mats for newspaper advertising, seven advertisements on conservation and four on curtailment during emergencies such as prolonged cold weather. In addition, there is a general booklet, "Keep 'Em Working and Conserve Gas," covering more efficient operation of ranges, refrigerators and water heaters; and two folders giving explicit directions for reducing consumption in house heating and kithen heating. A portfolio containing samples and order forms is being mailed to gas companies.

■ ■

Fat Salvage

Public utilities are using their facilities to encourage American housewives to fulfill the War Production Board's request for some 500,000,000 lb. of waste kitchen fats per year. From these fats comes glycerine, highly essential in the manufacture not only of gunpowder and dynamite, but also for many other necessary war products.

The housewife takes her salvaged fats to the local butcher through whom they reach the glycerine producer and the public utilities can and are doing much to stimulate the actual salvage in the home. Reminders to save waste fats from local gas companies have a stimulating effect on the collections.

The utility companies are using all the promotional devices which have previously been employed to sell gas, cooking equipment, refrigerators and other merchandise, and which have recently been converted to furthering the war effort, to further the waste fat saving campaign. Companies are mentioning fat salvage in their newspaper advertising and in envelope stuffers mailed out with monthly bills.

One of 30 window displays on waste fat saving set up by the Public Service Electric & Gas Co., Newark, N. J.

Utility companies can obtain a four-color poster showing how waste fats are needed in the war effort from the Waste Fat Saving Committee of the Glycerine and Allied Industries, 11 W. 42nd St., New York. The committee will also furnish supply mats for envelope stuffers, copy ideas for publicity and advertising and factual material for home service department use.

■ ■

Government Manual Issued

The fall edition of the United States Government Manual, a 700-page reference book on the creation and organization, functions and activities of the federal departments and agencies, came off the press recently.

The manual may be purchased from the Superintendent of Documents, Washington, D. C. Single copies, $1.

"THEY GAVE THEIR ALL"

Staff Sergeant Thomas Charles Ferron, 22, aerial gunner, killed in the crash of a large bombing plane in New Mexico. Employee of Pacific Gas & Electric Co., San Francisco.

Coxswain Henry C. Kleinmeier, killed April 11 by a subway train in Astoria while on leave. Only 13 days previous to his death he had distinguished himself in a torpedoing by sticking to his guns and directing fire at an enemy submarine; together with eight others he spent 40 hours on a raft before being rescued. Employee of Brooklyn Union Gas Co., Brooklyn, N. Y.

Lieut. Russell Smith, U. S. Army Air Corps, killed in action during the battle of the Coral Sea. Employee of Southern California Gas Co., Los Angeles.

Conservation Booklets

A series of helpful little booklets on subjects ranging from conservation of food to conservation of a gas range has been prepared by the Peoples Gas Light & Coke Co., Chicago, under the supervision of Karen Eladoes, home service director.

Presented in an attractive variation of colors, the booklets are of a handy 4 by 5 in. size.

The vital importance of hot water on the home front is carefully outlined in one leaflet which stresses the necessity of keeping the provider of that hot water — the gas water heater — in good condition and repair. Many economical recipes appear in No. 1 and No. 3 booklets on canning and food. Gas appliances are presented in the best light of wartime use in another member-booklet of the series.

The Peoples Gas Light & Coke Co., by the issuance of these conservation bulletins to its customers, is assisting them in maintaining "duration use" of gas appliances.

■ ■

Meatless Recipes

"Meatless Meal Maneuvers" is the catchy and timely title of a booklet presented by the Wisconsin Public Service Corp., Green Bay, Wis. It contains a large number of meatless recipes and is destined to be much in demand when meat rationing arrives.

■ ■

OPA Price Bulletin

OPA has issued Service Trades Bulletin No. 1 covering the repair, maintenance, and rental of radios, gas and electrical appliances. The bulletin, which covers ceiling prices and gives pricing rules, may be obtained from regional or state offices of OPA and not from Washington.

HOW THE INDUSTRY SERVED IN 1942

By ARTHUR F. BRIDGE

President, American Gas Association

ACTUATED by one primary motive—the strengthening and furthering of the nation's war effort—the gas industry in 1942 exerted every effort to increase America's wartime productive capacity to its maximum.

The outstanding development of the year was the mounting demands of war industries for gas fuel, approximately 25% of the present deliveries of natural gas and 15% of manufactured gas being used by war industries at the year end.

As a result of this accelerated use of gas in the fabrication of the implements of war, particularly the making of precision parts for guns, tanks, planes, ships, shells, etc., it became necessary during the latter part of the year for the War Production Board to issue orders limiting certain uses of natural and manufactured gas. Both orders prohibited new gas-heating installations in certain critical areas and provided for steps to be taken to curtail gas consumption in time of threatened shortages. Later the above orders were revised and tightened.

Issuance of these limitation orders by WPB was made necessary by the fact that gas companies were unable to obtain steel and other critical materials to expand present capacities to meet greatly increased demands for gas fuel. Other reasons for issuing the orders, as stated by WPB, were to alleviate the oil shortage and lighten transportation load.

Prior to the issuance of these orders, the American Gas Association, through its Committee on War Activities and Committee on Publicity and Advertising, had conferred frequently with WPB. An appeal to consumers to economize in the use of gas in order to save critical fuels and transportation and help avert gas shortages was made by WPB Oct. 28. On Nov. 16 the Association announced its support of WPB's gas conservation program and at the same time released to gas companies throughout the country a public educational campaign covering the conservation and curtailment of gas fuel. The keynote of this campaign was: "Gas is a vital war material. Use it wisely." The gas industry's national advertising program also emphasized the need of conservation.

At the end of 1942, 19,249,000 customers, or the largest number ever connected to the mains of the industry, were being served with gas. This was an increase of 627,000 over the year 1941. Of this total, manufactured gas companies served 10,733,000 customers and the remaining 8,516,000 customers were served by natural gas companies.

Revenues of the entire industry, both manufactured and natural, aggregated $995,045,000, a gain of 8.9% over 1941. Natural gas companies grossed $584,533,000, a gain of 11.2%, while manufactured gas companies were $410,512,000, or 5.7%, more than for 1941.

Industrial sales of natural gas registered an increase of 58,911,000,000 cu. ft. at the end of 1942, bringing the total sales to 908,476,000,000 cu. ft. This was a percentage increase of 6.9. Sales of manufactured gas for industrial purposes were 93,275,000,000 cu. ft. in 1942, or 17.5% more than for the previous year.

In the household uses of gas, such as cooking, refrigeration, house heating, water heating, etc., manufactured gas companies sold 283,900,000,000 cu. ft., a gain of 6.7% for the year. Gas consumed for house heating registered an increase of 17.3%. Sales of natural gas for domestic uses registered an increase of 13.3%, bringing the sales for that purpose to 479,274,000,000 cu. ft.

Indications are that the total production of natural gas in 1942, including amounts used in the manufacture of carbon black and for field purposes, will reach a total in excess of three trillion cu. ft. Some 232,000,000,000 cu. ft. of natural gas were used as fuel for generating electric power in 1942, an increase of 29,000,000,000 cu. ft. over 1941. In several instances, the above figures established new records.

Prompt action by the gas industry on matters originating with government war agencies has been cleared through the Committee on War Activities of the American Gas Association. Activities coordinated and directed by this committee, which is broadly representative of the natural and manufactured gas industries, have included salvage and the exchange of large quantities of materials and equipment by gas companies, the conservation of oil and tin, the preparation of handbooks on the protection of the gas industry, a study of the manpower situation, and various other emergency matters arising out of the war.

It is estimated that 55% of the nation's productive capacity is being devoted to the prosecution of the war. In the all-important metals field, where industrial gas is so extensively used, it is much greater. The transformation to a wartime basis has been accomplished in such manner as to cause no bottlenecks. In fact, all industry has experienced the quick conversion of industrial gas equipment. Too, new equipment has been available, thus facilitating new production peaks. The quality of American-made implements

ARTHUR F. BRIDGE is vice president and general manager of the Southern Counties Gas Co. of California, with headquarters in Los Angeles. Born on April 2, 1891, in San Francisco, Mr. Bridge was graduated from the University of California at Berkeley with a B. S. in electrical engineering in 1912 and received his M. S. in 1913. He became associated with the California Railroad Commission in 1913 as assistant engineer and remained in that post until 1917, when he joined the United States army as a first lieutenant in the engineer corps.

His record during the World War includes service overseas from July, 1918, through March, 1919. He became a captain in the engineer corps in September, 1918, and was named assistant chief engineer of the Belgian mission of the American Commission to Negotiate Peace and War Damages in Allied Countries in January, 1919.

He became associated with the Southern Counties Gas Co. in 1919 as rate engineer, became executive engineer in 1926, and vice president and director in 1928. He was elected to his present position as vice president and general manager in 1939.

He has been a director of the American Gas Association for several years and a member of the Laboratories Managing Committee since 1931. He also has been a member of the Managing Committee of the Natural Gas Section for several years.

A. F. Bridge

of war has been acclaimed by all of the United Nations. Most war machines have hundreds of parts — each must be perfectly formed and of maximum strength. It is in the manufacture of these high quality parts that industrial gas is making its greatest contribution to the war production effort. The manufacture of high quality, interchangeable parts is the foundation of mass production, modern gas furnaces for forging, hardening, annealing and other heat treatments make it possible to deliver such parts at ever-increasing rates.

While many gas furnaces of special design are being installed to take care of unusual production problems, it is a significant fact that by far the greatest amount of production from gas equipment is in furnaces the designs of which were thoroughly tested out before the war started. This has been one of the chief reasons why deliveries of new industrial gas equipment have not been unduly delayed—why there have been no bottlenecks. On the other hand, where special designs of gas heating equipment have been deemed advisable and desirable, the industry has drawn on its store of research and engineering knowledge and quickly produced suitable, automatic, heat treating machines that fit perfectly into the exacting requirements and are speeding the tempo of our vast war production plants.

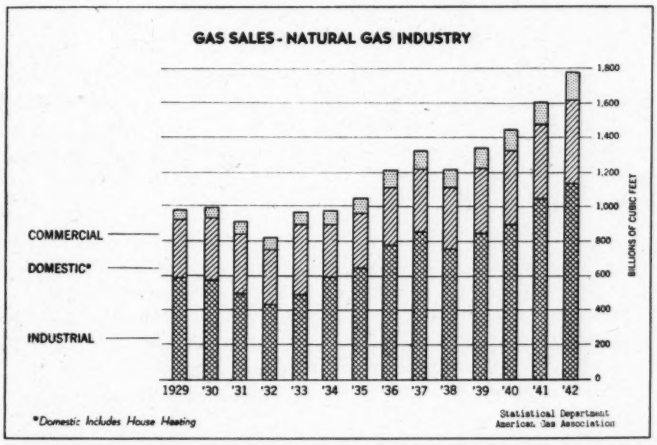
It is evident that more and more emphasis will be placed on dehydrated food to supply our overseas forces and lend-lease requirements. The clean, controllable qualities of gas are recognized by this expanding industry as highly desirable. During the important steps of storing and packaging dehydrated vegetables, fruits and other foods, a development of the gas industry is being put to ever-increasing use. This development, dehydrated air, protects the processed foods until they are permanently packed for shipment.

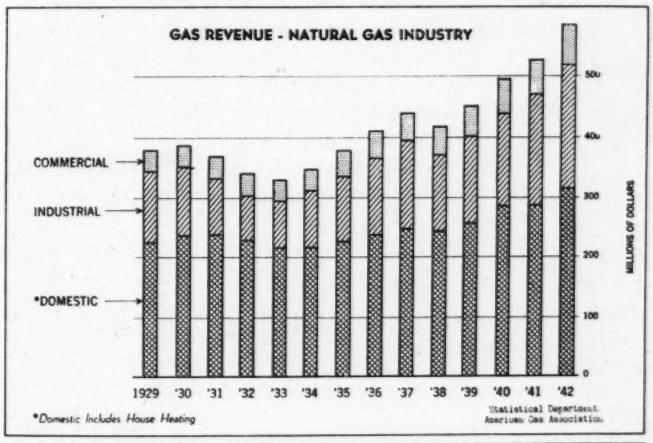
Toast affords an interesting sidelight on the feeding of men and women in this war. It is believed that ours is the first army to enjoy toasted bread as a regular menu item in all establishments except in the field. The familiar gas revolving toaster, seen in so many restaurants and lunch rooms, has gone to war, and is daily doing its share to maintain the strength of those men flying the planes and shouldering the guns.

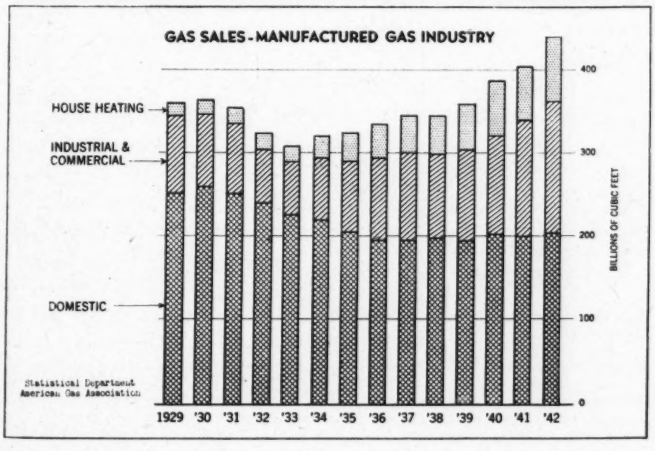
Other specialized cooking appliances that have been developed within the gas industry during peacetime are also hard at work preparing tasty food for the army and navy forces. For instance, gas-fired deep fat fryers are being used by the thousands. They are particularly popular with army cooks in preparing French fried potatoes, the kind most in demand by both sexes in the armed services.

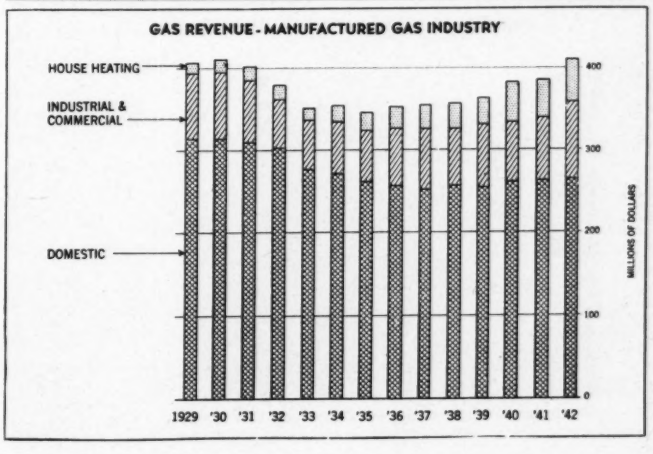
Continuing the trend which began considerably more than a year ago, activities of the American Gas Association Testing Laboratories have been directed more and more to the demands of all-out war. After numerous preliminary contacts, several assignments of a highly confidential nature were obtained from various branches of the armed forces. To properly handle them the War Products Department of the Testing Laboratories was established. A very substantial portion of the Laboratories equipment and staff is now devoted to essential war activities.

Close cooperation with the Office of the Petroleum Coordinator for War (now Petroleum Administrator for War) by natural gas companies brought about many developments during the year. Among the more outstanding were: (1) the relaxing of restrictions to permit further drilling of wells in the Appalachian region, eastern Kansas, portions of Oklahoma and Missouri, thereby considerably relieving gas shortages in those areas; (2) use of the Playa del Rey oil field, near Los Angeles, as a reservoir to store 2,000,000,000 cu. ft. of natural gas to be available during peak periods; (3) a thorough study of hydrocarbons and an increase in their production for use









PRELIMINARY ESTIMATES ON THE GAS INDUSTRY FOR 1942

	1942	1941	Per Cent Change
CUSTOMERS			
Domestic (incl. house heating)	18,146,000	17,536,000	+ 3.5
Commercial	1,009,000	995,000	+ 1.4
Industrial	94,000	91,000	+ 3.3
Total	19,249,000	18,622,000	+ 3.4
GAS SALES (M c. f.)			
Domestic (incl. house heating)	763,174,000	689,120,000	+10.7
Commercial	213,232,000	188,103,000	+13.4
Industrial	1,237,325,000	1,134,585,000	+ 9.1
Total	2,213,731,000	2,011,808,000	+10.0
REVENUE (Dollars)			
Domestic (incl. house heating)	$634,400,000	$587,650,000	+ 8.0
Commercial	115,832,000	107,617,000	+ 7.6
Industrial	244,813,000	218,767,000	+11.9
Total	$995,045,000	$914,034,000	+ 8.9

Statistical Department, American Gas Association.

in 100-octane gasoline, synthetic rubber and other war products, with a minimum use of critical materials.

Home economics departments of gas companies throughout the nation were the first to support the government's national nutrition program. These departments have afforded full cooperation to such community organizations as the Red Cross, Civilian Defense groups and nutrition committees. Such organizations look to gas company home economics departments for reliable instructin and leadership, and as a headquarters for meetings and demonstrations. Their programs also have dealt with the care and use of gas equipment, and in the future will include conservation and food rationing.

Gas leads the domestic field for cooking purposes. This is revealed in a recently published analysis of the 1940 census which discloses that 73% of the country's 20,291,512 occupied homes in urban territories reporting a cooking fuel utilized gas for cooking.

Wood, coal or coke, kerosene or gasoline, and not electricity represent the major potential markets for gas, the survey reveals. A total of 4,431,620, or 21.8% of homes in urban territory report the use of one of these fuels for cooking purposes. Thus there is a large unsold and lucrative market for the sale of gas cooking services.

That this market is being sold, and the use of gas for cooking is rapidly increasing in new homes built since the completion of the census, is clearly shown in the results of the American Gas Association's latest survey of new homes covering one and two family houses other than government projects built during 1941. Some 90% of these new homes use gas for cooking. The survey covered one out of every three homes constructed in 1941.

Gas for house heating ranks second (coal and coke combined rank first) among the nation's fuels, as the census further discloses that 3,122,577 homes in urban territories reported the use of gas for heating purposes as against 2,260,556 using oil. The American Gas Association's study further indicates that 59% of the new homes constructed in 1941, covered in the above mentioned survey, report the choice of gas for house heating.

Gas is also a preferred fuel in the defense housing projects sponsored by the various governmental agencies. A recapitulation of 325 such projects constructed as of Dec. 1, 1942, shows that gas is used by 85% for cooking, 81% for water heating and 36% for space heating.

Appointment by the Association of a Committee on Post-War Planning recognizes the vital necessity for preparing now to meet the stepped-up competition immediately following the cessation of hostilities and to prepare for the inevitable dislocation of industry. A survey of gas company opinion shows that a majority of companies feel that if they render efficient and satisfactory service now, their customers will become boosters of gas fuel in the post-war period.

A survey conducted during the year brought out the fact that gas companies were in favor of having the American Gas Association coordinate and supervise the research work of the gas industry. Among the branches of the industry specifically named to conduct research projects were the American Gas Association Testing Laboratories, the Institute of Gas Technology, the utilities, and the gas appliance manufacturers.

LP-Gas Industry Gains Despite War

FOR the year 1942 it is estimated that marketed production of liquefied gases totaled 548,000,000 gal., an increase of 19% over 1941, according to an article reviewing the status of the liquefied petroleum gas industry by G. G. Oberfell, vice president, Phillips Petroleum Co., Bartlesville, Okla., published in *Butane-Propane News* (Jan., 1943, p. 20). This is the smallest percentage increase in demand since 1938. In 1941 the increase was 47.7%, in 1940 the increase was 40.2%.

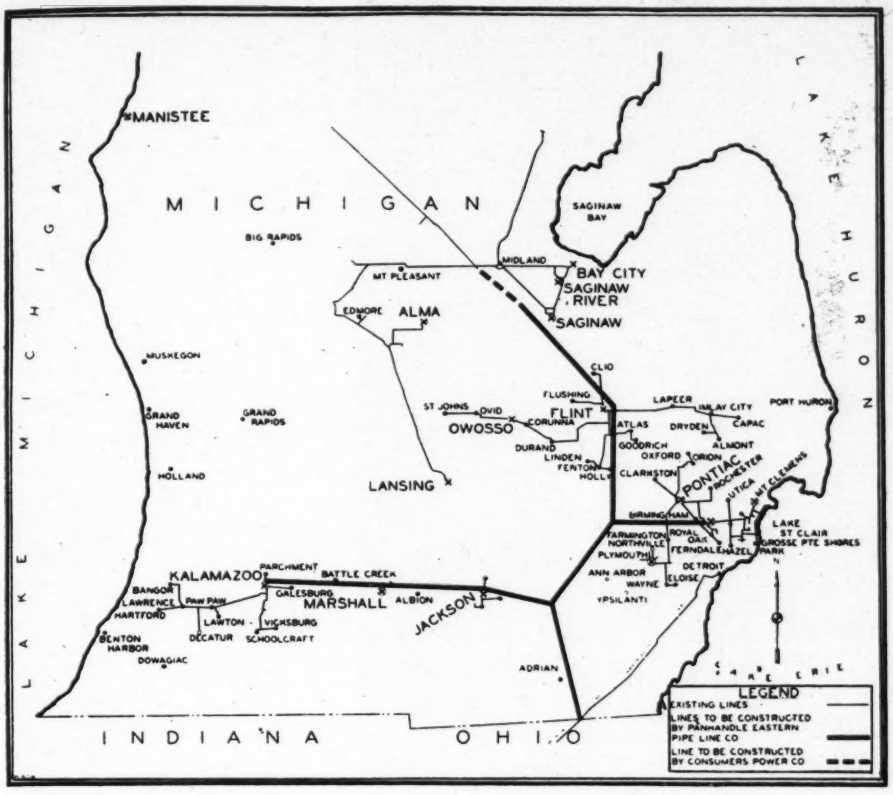
The convenience of liquefied gas for domestic use and the many advantages of this type of fuel for manufacturing operations had been so well sold by the industry that 1942 demand undoubtedly would have exceeded 600,000,000 gal. had it not been for the restrictions made necessary by the war.

It is estimated that 125,000 new domestic consumers of liquefied petroleum gases were added in 1942 despite the cessation of selling activity. A greater part of these were added early in the year before the industry was restricted. In 1941 there was an increase of 520,000 users. Some new installations have been made throughout the year at war housing projects. Total number of domestic consumers at the end of 1942 is estimated at 1,825,000.

Total supply of liquefied gases has increased during the year at gasoline and recycle plants built primarily to produce isomers for aviation gasoline. Oil refineries also have increased their output of some liquefied gases as a by-product of the manufacture of unsaturates and isomers for aviation gasoline and synthetic rubber. Production of liquefied gases at oil refineries increased from 10,000,000 gal. in January to more than 20,000,000 gal. per month in midsummer.

Much of the new production at natural gasoline and recycle plants became available so late in the year that its effects will not be noted until next year. In Illinois, for example, two plants with a total daily production of 100,000 gal. of liquefied gases were brought on stream in the final quarter of the year. One did not start until late in December. Another Illinois plant is being remodeled to produce an additional 50,000 gal. of LP-Gas daily beginning about Jan. 1. Illinois production of LP-Gas in 1943 may be nearly 50,000,000 gal. greater than in 1942.

Louisiana and Texas also have increased production through the completion of new plants in 1942. A number of other plants will be ready for operation in the early part of 1943. In all instances new plants now being completed are equipped for the fractionation of isobutane and other special cuts used for aviation gasoline and rubber.



Consumers Power Company

NATURAL GAS CHANGEOVER

▲

The map at left shows how Panhandle Eastern Pipe Line Co. will bring Texas natural gas into the large Michigan area served by Consumers Power Co. of Jackson. Panhandle Eastern has constructed 250 miles of pipeline to connect with Consumers' distributon systems in the Pontiac, Flint, Jackson and Kalamazoo divisions and in Marshall. Consumers has built 15 miles of line to join its Michigan natural gas transmission system with the Panhandle line.

EARLY this year some 148,000 former manufactured gas customers in Michigan will be served with natural gas by the Consumers Power Co., Jackson, Mich., when that company completes the program which will make it primarily a natural gas distributor. D. E. Karn is vice president and general manager of the company.

Extension of natural gas service to such important manufacturing centers as Flint, Pontiac, Jackson and Kalamazoo is of vital significance to the war effort. Besides making available a practically unlimited supply of heating energy to war plants it will also relieve rail congestion by releasing cars that otherwise would be needed for hauling coal to manufacture gas.

The territory already changed over during the past year included the Flint, Owosso and Pontiac divisions containing more than 110,000 gas customers. The changeover in the Jackson division began early in December and is expected to be completed this month, leaving only the districts of Marshall and Kalamazoo, with a total of 21,000 customers, to be converted from manufactured to natural gas.

Natural gas for the changeover is being supplied by the Panhandle Eastern Pipeline Co., Kansas City, Mo., and by Consumers' own natural gas transmission system using Michigan gas. Gas from the Texas Panhandle will meet approximately 70% of the needs of the 134 cities, villages and towns which come within the scope of the conversion program. The Texas gas to be burned in Michigan will come through the 250 miles of 12-in. pipeline laid by Panhandle. These 250 miles of pipeline will connect at the Michigan-Ohio border with the pipeline which now brings Panhandle gas to Detroit. Consumers Power extended its new Milwaukee Field pipeline from its terminus west of Midland to Milwaukee, a distance of about 15 miles. The accompanying map shows the routes of the pipeline construction.

The flow of natural gas is not entirely new in Consumers Power pipelines. For some years past this company has been supplying natural gas from Michigan fields to Saginaw, Bay City, Lansing, Midland, Alma and about 30 other towns, but with Grand Rapids and Muskegon also drawing natural gas from Michigan fields, the supply was deemed inadequate for further extension.

Consumers Power is handling its changeover proceedings with a minimum of inconvenience to customers. In areas where there were 500 meters or less, the conversion was accomplished in three or four days. In the more densely populated customer areas the changeover was made in two steps —the first to gas of 800 Btu..s and the second from 800 to about 1000 Btu. gas.

A well-equipped and efficiently trained staff of 280 men made necessary changes in kitchen ranges, refrig-

This blowout from the 16-in. line heralded the arrival of natural gas in the Michigan territory. Natural gas under compression released into the pipeline from gate valves 27 miles away cleared the line of water, oil, dirt, and other foreign matter.

CONSUMERS POWER CO. CHANGEOVER SCHOOL

Upper left: Natural gas comes to the school in a special tank truck. Lloyd Parsell adjusts the reducing valve through which gas is piped to the holder from which it will be conducted to the typical appliances used in training the changeover crews.

Center left: Cletus Farrell explains the changeover job system to one of his classes. Every appliance is listed on customers' cards on the form illustrated.

Lower left: Mr. Farrell gives his class practical experience with the appliances that are to be adjusted for the higher Btu. natural gas.

Upper right: Adjusting burners in the instruction school. Left to right around: James V. Stewart, Burr Hicks, Charles Tschanen, Bert Ramsour, Floyd McCoy.

Center right: Many worn or broken parts must be welded. Walter Von Dewalker makes them as good as new.

Lower right: Milling, drilling, and assembling operations in the machine shop. Left to right: Bert Dickinson, Walter Von Dewalker, Earl Murray.

erators, water heaters, burners, torches and special industrial equipment so that the customers would find no detriment to their appliances when they commenced to burn natural gas. This field crew was able to meet and solve every problem in homes and plants arising from the changeover, for the men had been tutored under actual working conditions. Natural gas was piped into the work room under line pressure for practical experience with the new fuel on all types of appliances. An office staff was instructed to explain the changeover to the customers.

A temporary rate schedule governing the distribution of natural gas which was submitted to the Public Service Commission involves a saving of 21% for domestic customers and 38% for house heating customers.

Upper left: Customer contact men—all high school teachers picked for their ability to explain temporary conditions in a way satisfactory to users. Left to right: Norman Dumphy, Leonard Buckler, F. Harrington, Frank Mason.

Lower left: Chief Telephone Operator L. A. Leibrook (right) supervises customers' calls and dispatches complaints to crew foremen. Joe Ingalls (left) files the work orders.

At right: Final chapter in the changeover job — the range burners must be adjusted exactly right. Mrs. Alex Latoski watches Serviceman Joseph Walkins, working on a protective newspaper which protects the floor, make the correct adjustments.

Ohio Fuel Gas Co. in a War Role

By JAMES E. HUMPHREYS

Director of Advertising and Publicity, The Ohio Fuel Gas Co., Columbus, Ohio

SHADES of yesteryear! When the surviving "old gas men" of a few decades back witness the wide fields covered in today's utility operations, they probably recall that the gas business was once a man's game and the women used the product—or else. We in The Ohio Fuel Gas Co. probably would have scoffed at a seer three years ago had he prophesied our operations today. On the occasion of the recent anniversary of Pearl Harbor we published an advertisement reporting to our customers on the company's *all-out* efforts in the first year of the war. It was amazing even to ourselves to see the many and drastic changes that had taken place in our own business.

There was the big job of providing gas for war industries as well as domestic and commercial customers. A book could be written on the extensive preparations and vast outlays of money to provide an adequate supply of gas and the necessary plant to deliver the gas where needed. A thorough program was set up to prevent sabotage and to deal with this threat if it succeeded in reaching us. There was the participation of gas company employees in the Utilities Repair Division of Civilian Defense. More than 85% of the employees completed the standard course in American Red Cross first aid and many followed with the advanced course.

Conservation Program: For the first time in 25 years customers were advised to conserve gas since it is a vital commodity in the war production program. We even conducted an educational campaign among our customers to inform them of the things we would ask them to do should an emergency exceed the bounds of our control. There was the matter of increased taxes, and we discovered that our federal tax bill for 1942 would equal the cost of 232 light tanks or 6430 jeeps or 37,646 sub-machine guns.

War Bond Sales: The War Bond campaign came in for a big share of attention. Our every-employee-a-business-builder program went out with the drying up of gas appliance merchandising. Asked by the Treasury Department to become a licensed agent for the sale of bonds, we swung our employees over onto the selling of bonds, staging contests to enliven the activity. The Ohio Fuel Gas Co. has issued over $1,500,000 in bonds through employee subscriptions and sales to others.

With nearly one out of five male employees now serving in the armed forces, we've had to double up jobs and make numerous changes in our set-up to deal with the public. Unusually high salaries paid war workers have added to the difficulties in meeting this situation. All of these problems have presented themselves to other gas companies and are being dealt with in a manner that seems to fit the case best.

Nutrition and Feeding: If these changes are radical departures from the business-as-usual times, certainly we have done handsprings along the lines of nutrition and feeding. Most gas companies may have stepped into such activities as related to the war, but we are told that our program includes several features which have not been generally adopted.

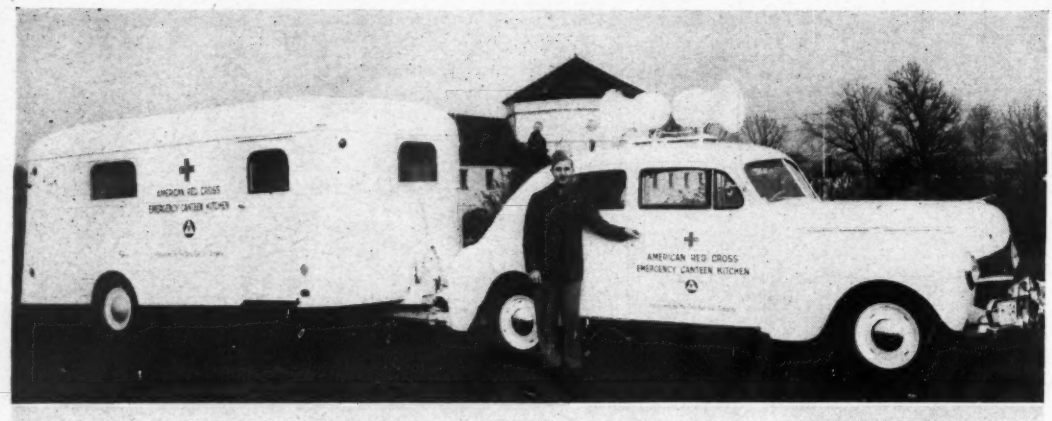
For years Ohio Fuel has maintained a home service department with representatives in its 10 operating districts. The work of these employees consisted of home calls answering complaints, making surveys or as a follow-up on merchandise sales. Also they made school and women's group contacts. For six years Gasco Food Institutes had been conducted in some 55 of the key cities served by the company (*GAS*, March, 1940, p. 18). These institutes were cooking schools lasting two or three days, sponsored by the local newspaper and held in school auditoriums and theaters. Two units covered the territory, each consisting of a lecturer, a manager of properties, completely equipped stage kitchen and a car and trailer for moving the equipment and personnel.

Virtually dropping the appliance merchandising program and changed conditions of dealers in other commodities who had participated in the Gasco Food Institutes caused a decision to abandon the cooking schools for the duration. The coming of automobile, tire and gasoline rationing greatly reduced opportunity for home calls. A new type of group customer contacts would be necessary to hold our place in the minds of our customers. Fortunately the opportunities which opened in this direction offered greater opportunities to serve the customer and to contribute to the war effort.

Last spring, Miss Hulda Ungericht, our home service director, gave special instruction in the Red Cross Nutrition Course to the representatives of her department and they in turn started teaching the course to Red Cross volunteers as fast as they could be qualified by the American National Red Cross. This course, consisting of 20 hours of classroom lecture and demonstration, took hold from the start in many cities. Today our home service representatives are encouraged to find others qualified to teach the classes, reserving the food demonstration sections for themselves. In this way they can multiply their activities among more women.

Seeing the high degree of interest in

Front view of the stationary Red Cross kitchen located on the company's sales floor at Columbus. Along left side are sinks and at right are utensil rack and counter space. Four large tables surrounded by chairs in the center of the room furnish accommodations for class work or even feeding space for small groups.



▲

ABOVE

The equipment for Ohio Fuel Gas Co.'s mobile canteens packed into the trailer and tow car and ready to roll.

BELOW

The mobile kitchen set up and ready to be operated by Red Cross canteen workers.

▼

this subject, nutrition centers were constructed in 40 of the larger offices. Government literature and charts, a monthly nutrition bulletin issued by our own company, and the literature of manufacturers and associations are available at these centers. In some cities Red Cross workers who have completed the nutrition course are assigned by the local nutrition chairman to operate these centers. In smaller communities the home service department has instructed the office girls on assisting the public in these matters. Thousands of housewives have stopped at these nutrition centers to discuss their food problems and obtain literature. In many cities window displays tie in with different phases of nutrition.

Along this line it might be well to mention a new war booklet for homemakers which is being distributed through the nutrition centers. We named it "War Ways—For Guardians of the Home Front." This booklet covers such subjects as the essentials in the daily food guide, economies in purchasing and storage of food, left-over hints, refrigerator hints, care of refrigerator, cooking to save food values, two weeks of Victory menus, Victory recipes, packing a lunch, making your range last, and fuel conservation. It also describes hand laundering, stains, care of water heaters and short cuts in home management. One page is devoted to some of the patriotic efforts in which the housewife can help—another lists help and information guides on civilian defense, house problems, emergencies and gas service in an air raid. This 16-page booklet printed in the nation's colors is now in its second printing—so great has been the demand for it. It is available to other gas companies at re-run prices through the organization which handled the production for us.

Canteen Training: Through continual contact with Red Cross on nutrition our activities followed on into canteen training. Red Cross canteen workers are the women who handle emergency feeding in times of disaster resulting from war, floods or other causes. This course is open to those women who have completed the course in nutrition. It also consists of 20 hours of class work plus additional hours of work assignment. Seeing a great need for assistance in securing and training volunteers in this important work, we set out on a most ambitious program. Since it involved many county chapters in the territory we serve, we went to the American National Red Cross at Washington for approval. Convincing them that our work would not be commercialized in any way, we received the "go ahead" to cooperate with the local chapters. This article will deal with our part in this program, but readers should not gain the impression that other organizations are not swinging in with their support in the same area. Because of this, our assistance is greater in some counties than in others. In many instances our home service staff are members of, or leaders in, the Red Cross canteen committees. In others we merely contribute our support along with others.

Mobile Kitchen Canteens: In an earlier paragraph it was mentioned that two trailers and two cars were used to move the stage equipment of the Gasco Food Institutes between cities. Plans were drawn up for converting these to Red Cross mobile canteen kitchens. A study was made of other such canteens. We attempted to build the maximum of cooking capacity into each unit. Plans were checked with large restaurant operators for the benefit of their suggestions.

Several months were required to process the priorities on critical materials needed, and construction had to be somewhat on a "trial and error" basis. Upon completion, the mobile canteens were inspected by the state director of health and a representative of the office of state fire marshal. Minor changes were made to conform to their suggestions to safeguard health and prevention of accidents. A manual was

prepared to instruct Red Cross workers in the specific operations of these kitchens.

Local Red Cross canteen units regularly operate from a stationary kitchen usually located in a lodge, church or school. Here they have the facilities for mass feedings that are not in regular full-time use. The mobile kitchens would be called in to supplement the capacity of local kitchens, or in case those to be fed were too far from the stationary kitchen to make transportation of hot food practical. Also, these kitchens can operate entirely independent of regular gas, electric and water supplies, and it is possible that the disaster which would create the need for such feeding might put regular utility services out of commission. How much help would these units be? Their full capacity will not be known until the need arises, but restaurant people estimate that each unit is capable of handling hot food for 1500 people and possibly could serve continuously.

Awaiting the call for emergencies, the mobile canteens cover our territory training Red Cross workers in their operation and assisting in securing additional volunteers for training. Trial feedings are held at war plants, schools, hospitals and with other organizations to give the women experience in operating the kitchens. In such cases all preliminary contacts are made by Red Cross and those fed pay for their food. Also, the kitchens are set up at traffic centers of the different communities and the public is invited to inspect them. Publicity heralding such events is handled by the Red Cross and the women in uniform act as hostesses on public inspections. Many women can be interested in taking the training course as a result of these inspections. Folders telling of the canteens are passed out at trial feeding and inspections. On several occasions the mobile kitchens have participated in civic parades.

Pictures describe the mobile canteens better than words. The cooking and part of the food preparation are handled in the trailers. Serving, dishwashing and part of the food preparation are cared for in a 14x35-ft. tent which is erected over the trailer. Sidewalls on the tents and the water heating range connected to the outside of the trailer permit volunteers to work in comparative comfort even in below-freezing weather. All outside equipment packs in the trailers for transportation.

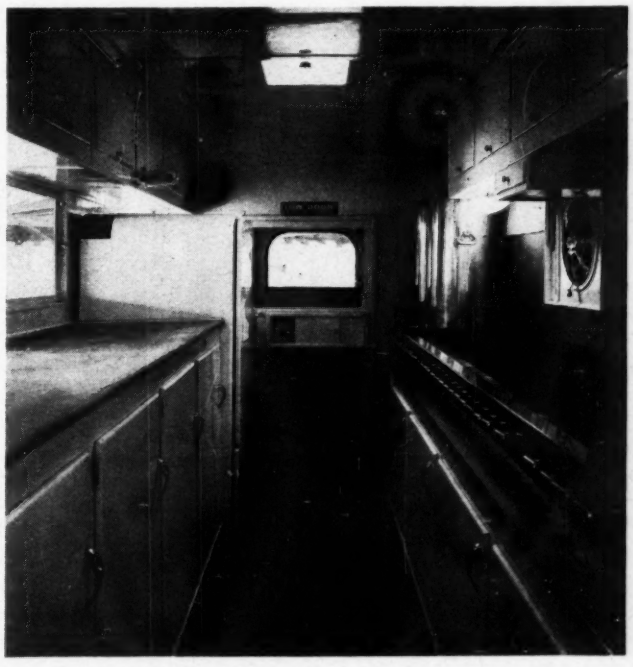
Fuels and Equipment Used in Mobile Canteens: The fuel used is Protayne, a commercial bottled gas. Two 100-lb. tanks carried in each unit will furnish enough fuel for over 30 hr. of continuous operation of the cooking, coffee and water heating ranges and the refrigerator. No place in our territory is more than an hour's ride from a replenishing supply of this gas. The electric system is either by storage battery or city current. If city current is not available, inside lighting is by storage battery and the tent area is lighted by gasoline lanterns. A 100-ft. extension cord is carried to reach city current if available, which also permits the use of exhaust and circulating fans and the radio. A large water tank is built into the top and front of the trailer, permitting running water both at inside and outside faucets. A 50-ft. hose is carried for connecting to city water if such is available, in which case the tank is cut out. A 4-gal. water cooler and paper drinking cups provide drinking water for the workers. Such a unit could not attempt to furnish drinking water to the people to be fed in an emergency.

The cooking vessels range from small pans to 20-gal. stock pots. The main range area can be covered with griddles for this type of cooking. Coffee is made in two heavily tinned 10-gal. urns which can be carried outside for serving. Skillets, kettles, mixing bowls, slicers, cutlery, scales, measures, etc., make up the other cooking utensils. The main cooking range uses bar burners to give the best heat distribution under large cooking vessels. It has a solid cooking area of 22 in. by 7 ft., plus four star burners at the end for small batch cooking. The coffee range is two star burners and the water heating range is the same type with four burners. In case of the need for stepping up cooking capacity, dishwashing could be dispensed with through the use of paper dishes and the use of the water heating range could be applied to additional cooking. A 5-ft. Servel gas refrigerator provides storage for butter and cream. Bulk perishables are delivered to the point of feeding as needed in emergency feedings.

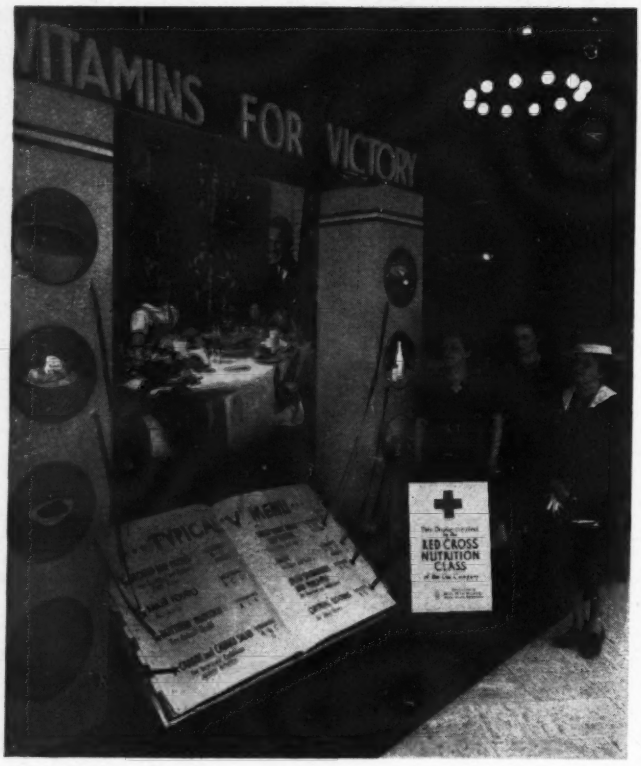
Each kitchen carries 400 sets of eating utensils consisting of plate, nesting cup and bowl in enamelware and knife, fork, teaspoon and dessert spoon in cheap silver. Through dishwashing, the number to be fed in an emergency could be multiplied. An emergency supply of linen, cleaning and sterilizing agents, coffee and other supplies are included in the supplies.

The tow car has several uses besides pulling the trailer. It is a two-door sedan with only a single seat in front for the driver, permitting the car to become an office for the local chairman. A folding desk and Red Cross bulletin heads are provided to facilitate her work. Built into the car is a loud speaker system operating on either battery or city current. This can be used in directing the people to be fed, in explaining the unit to large groups or for music in case of parades. This equipment was salvaged from the former cooking school operations. Also the tow car is equipped with a folding cot and bedding to serve as a watchman's bed or an improvised ambulance should one of the volunteer workers be injured. Fire extinguishers and first aid kits are located both in the car and trailer. The manager of each unit is trained in advanced Red Cross first aid.

Nearly 200 separate items of inventory are found in each unit with a total of over 3000 individual pieces. Storage of equipment into the trailer was planned with the idea of efficiency as well as weight distribution. Dishes are stacked in units of 25 and carried in dust-proof cloth bags. Silver is packed in units of 24 in flannel rolls to prevent rusting. All cupboards are labeled as to contents and the manager carries



Interior of trailer kitchen looking to the rear. Main range is of special design by Peerless. Coffee range is standard heavy duty hot plate. Servel gas refrigerator is seen on left.



▲

A window display on nutrition which was made a project of a Red Cross nutrition class.

▼

a master inventory list to assist workers in locating or replacing equipment and supplies.

The trailer and car are painted white with the lettering "American Red Cross Emergency Canteen Kitchen, Unit No. 1 (or 2), sponsored by The Ohio Fuel Gas Co." The Red Cross and the emergency feeding insignia of civilian defense appear on the equipment. The manager of each unit has had several years experience as a gas service man as well as serving as manager of the Food Institutes. Thus he is familiar with the problem as well as the territory and the company organization in the different cities. With two servicemen helping, the unit can be set up for operation in a little more than 30 minutes. Sand bags are used to hold the tent when staking is not permissible.

Advance arrangements for the unit are handled by the local home service representative through contact with the Red Cross. Also, she assists the local chairman in training the workers in the use of the kitchen. All appearances of the units are under the direction of the Red Cross—never the gas company. Any publicity relative to the appearance is handled by the Red Cross, though we will assist them in this.

Public Reaction: Now that we've described the equipment of the mobile canteens, the reader may wonder how the volunteer Red Cross workers and the public react to them. Modesty must be cast to the winds in telling this part of our story. The "ohs" and "ahs" exclaimed by the persons first seeing the units are enough to cause a glow in the cockles of any gas person's heart. The compactness, the gleaming utensils, the spotless cleanliness, the hundred and one conveniences captivate them immediately. In the case of public inspections the Red Cross workers show the equipment with a sense of pride that is hard to describe. Women going through the trailer ask when they can start training in this work. Both they and the workers can hardly accustom themselves to the fact that here is a mobile kitchen with practically every advantage of a stationary kitchen. Men who see the equipment are absorbed greatly with the mechanical side.

At the inside work counter, four women can make sandwiches continuously without moving. The running water, the built-in gas system, the dual lighting system — "Gosh," they say, "how did you think of everything?" They can hardly wait to cook in it. One day at a public inspection the wind blew the canvas of the tent in (we've provided against this happening again) upsetting a table on which was a 20-gal. aluminum stock pot. The manager hurried to examine the utensil, explaining that it had cost $35 and was irreplaceable. So impressed were the workers that we now let the value of the precious stock pot be known to them and they treat all equipment with greater care. And do they love to polish up that stock pot at the conclusion of a feeding!

Most gracious letters from local Red Cross officers come into our Columbus office after one of the units has made an appearance in a territry. Call our investment in these mobile kitchens "advertising" or any other name, but we have held rigidly to the principle of commercializing them in no way whatsoever. Even so, we consider them one of the best investments ever made with our promotional and advertising dollar.

Stationary Emergency Kitchen at Columbus: Our Columbus office has a large sales floor, the capacity of which is no longer needed for the display of gas appliances. An area over 30 ft. square was enclosed with wallboard and this was converted into a training and emergency feeding kitchen. This kitchen has been named the number one emergency feeding kitchen for the county and all canteen workers have experienced one or more trial feedings in its operation. This kitchen is equipped with two heavy duty six-burner hot plates for top burner cooking, a battery type oven, a two-burner range for the coffee urns and an 8-ft. gas refrigerator. Cabinets, sinks, tables and a utensil rack complete heavy equipment. It carries the same cooking utensils and 400 sets of dishes and silver as the mobile kitchens. Food from this kitchen is carried to the location of trial feedings, blood bank depots, etc., in the Red Cross station wagon. This kitchen is in use nearly every day for classes or feedings. It is not uncommon for two or more groups to make use of it in a single day. The Franklin County chapter of Red Cross stores certain food supplies in this kitchen for quick feeding.

Yes, we find ourselves doing some unthought-of things in the war effort, but we believe that it is a practical investment of time and money to the communities, to Victory and to ourselves.

Then Came Pearl Harbor...

A REPORT TO OUR CUSTOMERS ON THE GAS COMPANY'S ALL-OUT EFFORT IN THE FIRST YEAR OF THE WAR

It was just one year ago that Uncle Sam went to war. JAPS BOMB PEARL HARBOR — those words flashing across the Pacific, united a nation for war in the hour. Since that day many and fast have come the changes in our daily lives. "Business as usual" is out. In the gas business, as in others, one operation after another has been revamped to comply with total war. On the occasion of this war anniversary, we report briefly to our customers on a few of the things wartime conversion has meant to our business . . . how gas service has been harnessed for double duty on the home and industrial front in all-out war.

ANSWERING THE CALL OF WAR INDUSTRY

WAR BOND SALES

VIGILANCE AGAINST SABOTAGE

MEN IN THE SERVICES

CIVILIAN DEFENSE CORPS

TAXES IN TERMS OF TANKS

NUTRITION EDUCATION

PROGRAM OF CONSERVATION

RED CROSS MOBILE CANTEEN SERVICE

YOUR PART IN AN EMERGENCY

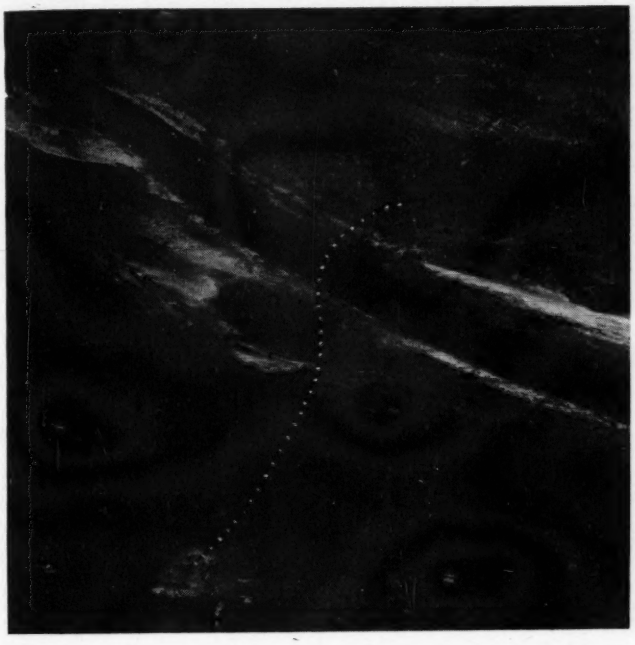
DOING DOUBLE DUTY!

THE OHIO FUEL Gas Company

BUY WAR BONDS

Gas Serves the HOME Front and WAR Industries

In this advertisement released during the week of Dec. 6, Ohio Fuel Gas Co. reported to its customers on its all-out effort during the first year of war.



Scene of the first of two breaks in the Amarillo-Denver pipeline at Seneca Creek in northern New Mexico. Broken line shows course of 600 ft. of 6-in. by-pass which connected the broken 22-in. pipeline.

RADIO AND NEWSPAPER

Prove Their Value in Informing Consumers During Gas Outages

A Report From
FRANK R. JAMISON

Director of Publicity and Advertising, Public Service Company of Colorado, Denver.

TODAY many gas utilities are faced with two grave possibilities: (1) that sudden winter peaks will force curtailment of domestic consumers in favor of war plants; (2) that bombs may fall.

Therefore, the story of how the Public Service Co. of Colorado used the radio and the newspaper to inform its customers quickly and accurately of a gas shortage emergency created by pipeline breaks in 1941 is particularly timely today. The story:

The Line Breaks: In September of 1941 two serious breaks in the 22-in. Amarillo-Denver pipeline operated by Colorado Interstate Gas Co. to bring natural gas to Denver and other Colorado towns created a sudden four-day crisis which was beaten only by "on-the-spot" action in which timing and team work brought together employees, customers and publicity in an invincible triple-pass combination.

The line breaks near Clayton, N. M., were over 300 miles from Denver and occurred at 6 a. m. on Monday, Sept. 22, at Seneca Creek with 140 ft. of line being washed out, and on Tuesday at Corrumpa Creek with a loss of 300 ft. of line. Emergency crews went to work immediately, by-passing the first break with 700 ft. of 6-in. line, the second with 3500 ft. of 6-in. pipe. Natural gas began to flow through the by-passes at 6:30 a. m. Friday morning. By Oct. 5 permanent repairs had been effected at both breaks.

Statistics: At time of break, Denver temperature was 40° F.; slight rain falling; in New Mexico, 35°-40° F. with 2.1 in. rain in 24 hrs. Normal output of gas in Denver would be about 40,000,000 cu. ft., of which 18,000,000 cu. ft. is domestic heating. Denver gas customers number about 84,600.

Emergency Gas Manufacturing Plant: The emergency hit Denver like a clap of thunder out of a clear sky. Crews at the city's emergency gas manufacturing plant went into immediate action, with 44 operators eating, sleeping and working around the clock throughout the emergency. By Tuesday the plant was carrying the load when natural gas was not available. Maximum capacity of the plant is under 500,000 cu. ft. of gas per hour. Running at full capacity for 73 hours, the crews had the four gas generating units "bulging the stays." Oil for the gas was shipped in and used by the tank car and truck load.

Publicity Takes Over: Early Tuesday morning when word of the second break indicated that the natural gas supply in Denver would be exhausted at noon, the two newspapers and five radio stations were notified. There was no time for pre-preparation of radio continuities. Therefore engineers from Station KLZ of the Columbia chain, upon learning of the situation, installed its equipment on a desk in the utility's advertising department. Stations KOA, KFEL and KVOD in Denver likewise followed this procedure. A reporter from KMYR remained constantly at the utility offices gathering information which was broadcast from his station's studio. KLZ, in addition to the broadcasting service, had 60,000 circulars

AT LEFT: The investigation department switchboard on the main floor of the Gas and Electric Building was extremely active during the emergency. AT RIGHT: The main telephone switchboard with Operators Mary Tersney, Alma Hendrix and Ethel Lindquist handling the emergency load.

AT LEFT: Time out for Gas Maker Lytle Bugh and Fireman George A. Brubb at the emergency gas manufacturing plant. AT RIGHT: No time to go out for dinner as gas plant crew members line up for chow: Clarence Love, Lou Bradley, Adrian Maguire (dishing it out), and G. C. Knight and E. J. Martin.

printed and distributed to principal grocers in the city, so that on that first day grocery store customers had the complete story in published form. All this radio service was rendered to the utility voluntarily and without compensation, the broadcasting stations deeming it their civic duty.

Broadcasts: Immediately broadcasts were started and continued at 15-minute intervals throughout the day. These broadcasts gave customers all the facts concerning the pipeline break which were available at the time.

In order to have full and latest information, immediate contact was established with the report crew at the point of rupture, an effort being made to secure reports hourly. In this function the advertising department came second only to wires for obtaining equipment or for sending or receiving instructions to the point of rupture.

Full reports were broadcast over all stations as fast as they were received. Appeals were continuously made for people to conserve the use of gas to the point of absolute necessity. Throughout the day and night regular radio programs were interrupted to broadcast late developments. Every news broadcast from each station, including KMYR which broadcasts news hourly, carried information concerning the pipeline breaks and the progress which was being made in repairing them.

Newspapers: The newspapers gave equal cooperation and support with the radio stations. Stories covering the exact information received by the advertising department aided greatly in carrying knowledge of the situation to the public. Published pictures of the flooded area gave an understanding of the conditions under which the repair crews were working. The company's only paid advertisement was the "Thank You" ad which is reproduced with this article.

News Gathering: The collection disbursement of all information on the situation was centered in the company's advertising department with the complete cooperation of all other departments. The operating department supplied hourly bulletins concerning the send-out, pressure and the amount of manufactured gas going into the mains. Press conferences were held at regular intervals throughout the emergency at which newspaper and radio reporters met in the office of Director of Publicity and Advertising Frank R. Jamison. These conferences were attended by President and General Manager Guy W. Faller, Vice President and General Commercial Manager G. B. Buck, Vice President and Secretary J. E. Loiseau, General Superintendent of Gas Operations F. T. Parks, and M. A. Rowley, advertising department.

Customer Cooperation: The cooperation that the company received from its customers is best shown by the fact that there was an immediate reduction in the use of gas. This reduction finally descended to the point of 75% of the load, where it was maintained until repairs were made.

All during Tuesday, Wednesday and Thursday appeals to customers to conserve gas went out on the air and through the newspapers.

The response was remarkable. The 11 to 12 o'clock noon load was cut from 1,296,000 cu. ft. on Monday to

▲

This six-column by 20-in. "Thank You" advertisement was inserted in the Denver papers after the emergency had ended. The advertisement was placed in newspapers outside of Denver during the following week.

▼

A Sincere Appreciation

During the past week, your newspapers and your radio have brought you the fast-moving account of the part you were playing in a wonderful demonstration of co-operation and teamwork by all hands.

Your quick understanding of a critical situation, and your eagerness to help in every way possible, call for words of appreciation quite beyond our ability to express.

No finer demonstration of helpfulness has been seen than that shown by our customers who voluntarily reduced their use of gas to the utmost, in order that all might share in the available supply.

Each and every employe helping to carry the unexpected responsibilities of this past week joins in the wish that his or her sincere thanks be extended to all who so generously shared the load and helped to "get the job done!"

In living through such an experience, and in working with such fine friends and customers, newspapers and radio stations, supply and service organizations, we have learned how impossible it is to adequately express all that we mean when we say, "Thank You"

Guy W. Faller
President and General Manager

Public Service Company of Colorado

727,000 on Tuesday, to 395,000 on Wednesday, to 360,000 on Thursday. The night load beaween 5 and 6 o'clock was cut from 1,161,000 cu. ft. on Monday to 510,000 on Tuesday, to 380,000 on Wednesday. The morning load from 7 to 8 o'clock was cut from 1,796,000 cu. ft. on Monday to 1,147,000 on Tuesday, to 500,000 on Wednesday, to 555,000 on Thursday.

By Thursday afternoon, when the gas manufacturing plant was shut down, natural gas from the small amount remaining in the pipeline was made available in limited quantities, and the load picked up slightly. Continued appeal to customers, however, to curtail their use of gas was effective. They were asked to wait until announcement was made that the pipeline had been repaired and that natural gas was again flowing in from Texas. As a result, the load was kept down throughout the remainder of Thursday.

The public regarded the problem as did the company, and many interesting incidents were reported. For example, women bundled themselves up and canvassed their neighborhoods, telling people of the necessity to conserve gas so that it could be used in hospitals, in homes where there was sickness or new babies, or where other emergent needs existed. In the words of Advertising Director Jamison, "I shall never cease to feel extremely grateful for the manner in which the public responded to our requests and stayed with us until the emergency point had been passed."

Service Operations: Throughout the four-day crisis the servicemen stood at emergent attention to answer calls from the utility's 22,500 house heating customers. Before the line was repaired practically all of the house heating appliances were off, and the problem of getting these back on was important both to the customer and the company. Explicit instructions were given over the radio and in the press, and many people, following these, were able to take care of their own needs. As soon as the line was repaired and the manufacturing plant shut down, servicemen were districted and sent out to service all appliances and to take care of those people who had felt that they were not capable of turning on their own plants. As the men went about this adjusting work they were greeted with messages of comfort and cheer and often invited to dine with the family. The outage created an excellent opportunity to cement good relations between consumer and utility.

Safeguards: In giving out instructions for the turning on of appliances over the radio and in the press, great emphasis was placed on calling the company if there was any doubt in the customer's mind as to whether or not he could successfully adjust his own appliances. This procedure was successful and no lost-time accidents either to customer or employee were reported.

Natural Gas Again Available: Thursday night at 10 o'clock releases were given to all five radio stations simultaneously, announcing that natural gas would be available for conservative domestic use in Denver, Friday, Sept. 26, 1941, at 8 a. m. The newspapers were informed before publication time.

Oil Compact Commission Holds Winter Meeting

By O. D. HALL

SETTING by the states of a minimum price for natural gas at the well head at 5¢ per M c. f. was recommended by the regulatory practices committee of the Interstate Oil Compact Commission, and adopted by the whole commission at its winter quarterly meeting at Oklahoma City, Okla., Dec. 18 and 19. About 100 members, observers and visitors attended.

The report of the committee, presented by T. A. Morgan of Kansas, chairman, stated that: "Developments of the past 18 months have made the conservation and utilization of natural gas of greatly increased importance, and one challenging the attention of the regulatory commissions. There has been discussion of the importance of the price paid for gas as affecting its conservation. It is a matter affecting 78.7% of the total production represented by Arkansas, Colorado, Illinois, Kansas, Kentucky, Louisiana, Michigan, Oklahoma, Pennsylvania and Texas.

Affirming findings of its various committees regarding the conservation and utilization of natural gas, the Interstate Oil Compact Commission recommended that various regulatory bodies and public officials of the oil and gas producing states give consideration to this subject. Recommendation were that authorities of these states compile and study data on each oil and gas reservoir, including reserves, production, utilization, as well as physical and chemical characteristics of the gas. From such data the commission report recommended that steps be taken to insure adequate supplies for domestic and industrial demands. It was suggested that regulatory authorities could insure such supply by requiring proper pressure maintenance, recycling, gasoline or commercial product manufacture, or by plugging in or shutting off such gas as cannot be efficiently converted or consumed by these or other acceptable methods.

The commission further recommended that separate acts for oil and natural gas be passed by legislatures and that gas laws should provide for regulated and ratable taking at the source and for protection of correlative rights of producers and royalty owners. Such laws should guard against waste and the inefficient utilization of natural gas and should be as nearly uniform among the states as local conditions will permit.

The Interstate Oil Compact Commission report estimated reserves of natural gas at 85 trillion cu. ft. and annual withdrawals at about 3½ trillion cu. ft., equivalent in fuel value to about one-third of the total annual petroleum production. "Thirty-five million people in 34 states and the District of Columbia enjoy the benefits of this clean, convenient and efficient fuel," the report continued. "Use of natural gas for synthetic products is growing daily and chemical synthesis of natural gas is expanding to fill a multitude of the needs of complex modern life. The future will find automobiles driven on tires made from gas and powered by a fuel obtained by chemical conversion of the same gas. Chemical products for war, explosives, agricultural fertilizers, raincoats, plastics, resins, nylon hosiery, dyes, solvents, clothing, drugs and an unlimited array of products are now available and soon will be made from natural gas," the report stated.

The Interstate Oil Compact Commission, at its meeting Aug. 23, 1940, appointed a legal committee to draft and submit a suggested oil and gas law for states desiring to enact or amend conservation laws. This committee, after many meetings, presented a suggested bill of this kind to the Oklahoma City meeting. Earl Foster, Oklahoma City, is chairman of this committee.

The report of the research and coordinating committee, Dan O. Howard, of Oklahoma, chairman, which was ap-

Snapped at the Oklahoma City meeting of the Interstate Oil Compact Commission last month. Left to right: Judge J. C. Hunter, first vice chairman; Andrew F. Schoeppel, chairman, and governor-elect of Kansas; E. G. Dahlgren, technical secretary, Research and Coordinating Committee; and Clarence T. Smith, second vice chairman, all of the Interstate Oil Compact Commission.

proved by the commission, called attention to its nation-wide study of production reserves and of conservation and utilization of natural gas, presented at the Chicago quarterly meeting in October, 1942, stating that it was the most comprehensive study of its kind ever conducted in the nation (*GAS*, Nov., 1942, p. 22, and this issue, p. 39). The committee recommended that regulatory bodies in each state study the conservation, reserves, production and utilization of gas in each oil and gas reservoir. It also recommended that each regulatory body maintain all possible data regarding stripper wells. It also recommended that non-member states be invited to join the Interstate Compact Commission and participate in its program. At present 11 states are members of the commission: Arkansas, Colorado, Illinois, Kansas, Kentucky, Louisiana, Michigan, New Mexico, New York, Oklahoma, Pennsylvania. States represented by official observers are: California, Reed D. Bush; Indiana, George V. Cohee; Nebraska, Allen G. Burke; Wyoming, Warren D. Skelton.

The research and coordinating committee recommended retention of E. G. Dahlgren, Oklahoma City, as its technical secretary and of his assistant, Jean B. Wilson, for the coming year.

The program of the first day was devoted to addresses and reports by states on the stripper wells situation and to committee meetings. All speakers agreed that the stripper wells, generally defined as wells which produce less than 10 barrels of oil per day, are of growing importance in keeping up the supply of oil for the duration of the war. Papers on this subject were delivered by Dr. E. DeGolyer of Texas, assistant deputy petroleum coordinator; H. B. Fell, Ardmore, Okla., executive vice president, National Stripper Well Association; and Samuel F. Peterson, state petroleum engineer for Illinois.

Mr. Peterson stated that if the 10,000 stripper wells in the old Illinois field not already affected were put under gas repressuring or flooding, a total of about 50,000,000 bbl. could be recovered in that state.

The following officers were elected for the coming year, upon recommendation of the executive committee, approved by the entire commission:

Chairman, Andrew F. Schoeppel, governor-elect of Kansas; first vice chairman, J. C. Hunter, Abilene, Texas; second vice chairman, Clarence T. Smith, Flora, Ill.; secretary, Charles L. Orr, Oklahoma City, re-elected. Governor-elect Schoeppel succeeds retiring Governor Leon C. Phillips of Oklahoma as chairman of the commission.

The commission recommended that headquarters continue to be maintained at Oklahoma City and that contributions for its support be increased from $26,520, amount received during the past year, to $50,000 for 1943, of which $30,000 will be needed to conduct its present program, and the remainder for educational and legislative work.

The commission recommended that various states vote to extend the life of the compact four years beyond Sept. 1, 1943, present expiration date, to Sept. 1, 1947. Such extension would then be submitted to Congress for approval.

■ ■

New Oklahoma Natural Line Augments Tulsa Gas Supply

THE 12-in. natural gas pipeline constructed by the Oklahoma Natural Gas Co., of Tulsa, Okla., from the great gas supply in the Chickasha and Cement, Okla., fields to Stroud, was scheduled for completion during December.

The line 96 miles long was started last May to carry gas at 1000 lb. pressure at a maximum capacity of 60,000,000 cu. ft. per day to a connection with the company pipeline system at Stroud. It will supplement and greatly increase the supply of natural gas available to Tulsa and other cities on the system.

The pipe is electrically-welded steel and crosses the South Canadian and North Canadian rivers on specially constructed bridges. The South Canadian bridge has one span 1760 ft. long with a backstay of 880 ft. making its total length 2640 ft., the longest gas pipeline bridge in this section of the Southwest. The bridge over the North Canadian River is 360 ft. long. Estimated cost of the line is $1,200,000.

■ ■

SEC Ruling on New Jersey Utility Upheld by Court

The United States Supreme Court on Dec. 14 refused to reconsider the decision of a lower court which ruled that the Public Service Corp. of New Jersey is subject to the death sentence clauses of the Public Utility Holding Act of 1935.

Public Service Corp., already subject to certain provisions of the act, was ruled to be a subsidiary of the United Gas Improvement Co., which is already distributing its holdings under a Securities and Exchange Commission order.

Public Service Corp. had asked the SEC to prove that it was not a subsidiary of the United Gas Improvement Co. or the United Corp. of Delaware.

■ ■

Brooklyn Union Sets Send-out Record on Dec. 20

Brooklyn Union Gas Co., Brooklyn, N. Y., established a new all-time record on the coldest Dec. 20 in 70 years with a send-out of 131,306,000 cu. ft., nearly 10,000,000 cu. ft. above the former peak. The company works manufactured a record total of 130,470,000 cu. ft., only slightly less than the total amount pumped into the distribution mains, with the result that the reserves stored in holders remained practically untouched.

The record was made possible partly through the cooperation of customers who refrained from using ranges and water heaters for supplementary heating during the cold spell.

■ ■

Search Brings Used Pipe For Denver System Repairs

After securing a priority from the War Production Board and instigating a nation-wide search, the Public Service Co. of Colorado was fortunate in obtaining four carloads of 20-in. used steel pipe to reinforce the distribution system of South Denver. The pipe was purchased in Geneo City, Wis., from a gas company's abandoned pre-war project.

Memphis Natural's Reduced Rate Becomes Effective

THE Federal Power Commission Dec. 12 announced that it has allowed a schedule of reduced rates for natural gas sold by Memphis Natural Gas Co. to Arkansas Power & Light Co. to become effective as of Nov. 1, 1942. Filing of the reduced rates follows a complaint by the Arkansas Department of Public Utilities asking the commission to order reductions in the wholesale rates. Retail residential rate reductions of approximately 12.9% for McGehee, Dermott, Lake Village, Eudora, and Wilmot, Ark., are expected to go into effect as a result of the new filing, since the complaint stated that the Arkansas commission would pass on to the customers of Arkansas Power & Light any reduction secured by the FPC.

According to the complaint, which was filed on April 25, 1942, the Memphis company has been engaged as a public utility in owning and operating a natural gas pipeline extending from the Richland-Monroe natural gas fields in the state of Louisiana, through the states of Louisiana, Arkansas, Mississippi and to Jackson, via Memphis, in the state of Tennessee.

The complaint also stated that the average rate for gas purchased for resale by the Arkansas Power & Light Co. during 1940 was approximately 29.5¢ per M c. f., while gas transported a much greater distance was sold by the Memphis company to the municipal distribution system at Memphis at an average rate of less than 15¢ per M c. f. Based on a comparison of load factors, it was stated that an average charge of 19¢ per M c. f. for the Arkansas company would have been comparable to the average price paid by the municipal system during 1940.

■ ■

District Branch Offices Of PAW Established

Opening of district branch offices in Tulsa and Pittsburgh and removal of the Chicago district office to a new address was announced by Deputy Petroleum Administrator Ralph K. Davies.

New address of the District Two (Mid-West) office is Room 1200 Blum Building, 624 South Michigan Ave., Chicago. Wirt Franklin is district director in charge.

To expedite the work of the district offices, branches have been established both in District One (East Coast) and in District Two.

The branch office of District One is located in Room 700, Benedum-Trees Building, 221 Fourth Ave., Pittsburgh. Stationed there are Virgil Bowyer and Henry W. Fuelhart.

The branch office of District Two is located in Room 410 Beacon Building, Tulsa, Okla. Stationed there are O. C. Brown of the Production Division; Mark S. Patton of the Natural Gas and Natural Gasoline Division; and Silas R. Clinkscales of the Materials Division.

■ ■

Southwest Experiences One-Day Natural Gas Famine

Excess demands and breaks in supply lines combined to give the area from El Paso, Texas, to Phoenix, Ariz., a one-day experience of natural gas famine on Dec. 9. War Production Board officials ordered the gas cut off or curtailed in industrial plants and requested domestic users to forego daily baths and reduce house heating when conditions became alarming.

C. C. Cragin, general manager, El Paso Natural Gas Co., which supplies the three states, said that besides the shortage caused by pipeline breaks, the heavy industrial demands had much to do with the brief drop in pressure. In this area many plants and power stations have been unable to convert to oil this winter because of the shortage of that fuel and lack of tank car transportation.

■ ■

Threatened Shortages May Create Gas Company Pool

In an effort to alleviate threatened shortages, eight natural gas companies in the Middle West have been asked to pool their facilities. This matter was discussed at a meeting in Chicago on Dec. 16 and at another gathering in Kansas City, Mo., on Dec. 18. W. A. Lyons, chief of the supply allocations section, WPB, presided at the first meeting when it was deemed advisable to consolidate the entire gas resources of the Midwest so that surpluses in one area could be made available to others.

The proposed plan would make fuel readily available to all war production plants in the area at all times. The program has been sponsored by the War Production Board and requires approval of the eight companies to become effective. Companies scheduled to make up the eight-way plan include: Natural Gas Pipeline Co. of America, Chicago District Pipeline Co., Panhandle Eastern Pipeline Co., Consolidated Gas Utility Co., Oklahoma Natural Gas Co., Kansas Power & Light Co., and Union Gas Co. of Kansas.

■ ■

PCGA Proceedings Issued

The proceedings of the Pacific Coast Gas Association for the year 1942 have been compiled and edited by the managing director of the association, Clifford Johnstone. The booklet contains a report of the various sections of the organization, including the business sessions, accounting section, sales and advertising section and the technical section, including the transmission committee report and the utilization committee report.

The report is prefaced by a complete list of the officers and committeemen of PCGA for the year 1942.

Eastward Extension of War Emergency Pipeline Begun

CONSTRUCTION of the 857-mile eastward extension of the 24-in. war emergency pipeline from Norris City, Ill., to refineries at New York and Philadelphia was started in December on the main line section west of Phoenixville Junction, Pa., according to Petroleum Administrator for War Harold L. Ickes. Laying the Texas-Illinois leg of the line was begun last August and completed last month.

Deputy Petroleum Administrator Ralph K. Davies said that more than 160 miles of 24-in. pipe for the extension had already been delivered to distribution points along the right-of way, and that if pumping and terminal equipment could be secured according to schedule, the 1388-mile Texas East Coast pipeline would start initial deliveries of crude and fuel oils to eastern terminals by midsummer.

When completed for full operation, the line will deliver 300,000 barrels of crude or fuel oils daily to east coast terminals. Twenty-five pumping stations along the 1388-mile route will be required to move the stream of oil from Texas oil fields and refineries to the east coast terminals.

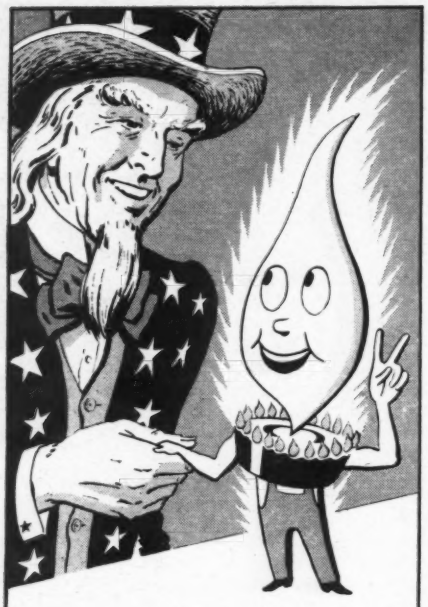
■ ■

Lone Star's Waco Compressor Plant Nears Completion

In an effort to meet a self-imposed Christmas deadline, the construction of a new Lone Star compressor station near Waco, Texas, is going forward with increasing rapidity. The station, being built under the supervision of A. H. Hemphill, Lone Star Co. assistant engineer, is to serve the growing industrial demand in that area of the Lone Star system.

The station's nine Cooper-Bessemer compressor engines will handle a peak capacity of 40,000,000 cu. ft. of gas. The plant will be complete with company cottages to house employees and their families.

Rate Committee of the American Gas Association at a meeting held at headquarters, New York, Nov. 20, 1942, at which rate problems arising out of wartime operations were discussed. Seated, left to right: **G. I. Vincent,** Central New York Power Corp., Syracuse, N. Y.; **C. L. Follmer,** chairman, Consolidated Gas, Electric Light & Power Co., Baltimore, Md.; **I. L. Craig,** Philadelphia Electric Co., Philadelphia, Pa.; **A. I. Phillips.** Standing, left to right: **Harry Weitzman,** Rochester Gas & Electric Corp., Rochester, N. Y.; **S. S. Mason,** Washington Gas Light Co., Washington, D. C.; **Robb Quinby,** The Brooklyn Union Gas Co., Brooklyn, N. Y.; **C. F. de Mey,** Columbia Engineering Corp., Columbus, Ohio; **A. Gordon King,** A. G. A. Headquarters; **Frederick C. Beck,** United Gas Pipe Line Co., Shreveport, La.; **R. E. Keller,** Ebasco Services, Inc., New York, N. Y.; **Benjamin Miller,** Gas Advisers, Inc., New York, N. Y.; **Kurwin R. Boyes,** Secretary, A. G. A.



TEAMWORK WINS

Gas Industry of the West Solves Wartime Problems by Cooperation.

For nearly a half-century, members of the P.C.G.A. have *pulled together.* War found them ready and able to meet emergency demands. One example:

SHORTAGE OF MATERIALS

Steel, copper, rubber, leather and tin to the Gas Industry mean pipe, valves, gaskets, solder and countless other items—used daily in serving the armed forces, vital war industries and 1,250,000 western home consumers. How to make the available supplies go further?

MEMBERS POOL RESOURCES

Gas companies exchanged inventory lists, to the end that emergency needs of one could be met from stock piles of others. Similarly, appliance manufacturers collaborated to assure completion of the maximum number of partially fabricated units. ★ An industry that can cooperate is a healthy industry. Gas men know *teamwork;* that's the spirit that wins!

THE PACIFIC COAST GAS ASSOCIATION

SERVING THE WEST—IN WAR AND PEACE

GAS FUEL

Mineral Men Discuss Gas in Chemical Projects

Chemical projects based on natural gas, oil and oil refinery operations have the brightest outlook for development or expansion into permanent industries in Oklahoma, C. T. Thompson, president, Thompson-Hayward Chemical Co., Kansas City, Mo., stated in an address before the Oklahoma Mineral Industries Conference at Oklahoma City, Dec. 10.

More than a dozen speakers appeared on the program of the conference, which was sponsored by the Oklahoma Geological Survey, Norman. Speakers dealt largely with mineral resources of the state and the Southwest which will stimulate development of chemical industries within the area.

Representatives of a number of gas and electric utilities were among the 100 delegates. Among utility men on the board of directors of the organization for 1943 are: C. A. Breitung, Southwest Gas Utilities Corp., Ada, Okla, and J. C. Happenny, Oklahoma Power & Water Co., Sand Springs, Okla. President of the conference elected for the ensuing year is George T. Stein, Eagle-Picher Mining & Smelting Co., Miami, Okla. Robert H. Dott, director, Oklahoma Geological Survey, Norman, was re-elected secretary of the conference. W. H. Lane, Oklahoma Natural Gas Co., Oklahoma City, was a member of the committee on arrangements.

A number of exhibits showing chemical by-products derived from Oklahoma mineral resources, including oil and gas, were placed in the meeting room by E. G. Dahlgren, technical secretary, Interstate Oil Compact Commission, Oklahoma City. The United States Bureau of Mines had an exhibit showing by-products and derivatives from natural gas and dry and liquefied natural gas.

■ ■

New England Gas Men Hold First New Year Meeting

The operating division of the New England Gas Association held a three-session meeting on Jan. 7 in Boston. The morning session included a series of demonstrations and addresses, while the two afternoon gatherings were devoted to the activities of the distribution and production groups of the operating section. George P. Langton is chairman of the distribution committee and E. L. Hall heads the production men.

Among the speakers at the association's first meeting in the New Year were: Robert Hodson, Malden & Melrose Gas Light Co.; Ralph W. Pendleton, assistant general manager, Massachusetts Safety Council; H. A. Wiley, field representative, mechanical goods department, Goodyear Tire & Rubber Co.; Martin T. Bennett, chief, gas production section, power division, WPB; Hall M. Henry, chairman, informal fuel committee of the New England Gas Companies; and Frank A. Engel, superintendent of distribution, Elizabethtown Consolidated Gas Co. of N. J.

■ ■

Canadian Group Hears of Servel Nutrition Program

More than 600 Canadian government, advertising and nutrition research officials, as well as members of the Canadian Gas Association heard Robert J. Canniff, advertising and sales promotion manager of Servel. Inc., Evansville, Ind., describe his company's "Nutrition in Industry" program. The occasion was the official inauguration of Canada's National Nutrition program at the International Wartime Advertising Conference in Toronto, Ontario, Nov.. 11-13.

Servel was further represented at the meeting by Arnold F. Scharer, export manager and W. T. Wyatt, general manager of Servel (Canada) Ltd.

■ ■

New Slate of Officers for Oklahoma Utilities Group

Officers of the Oklahoma Utilities Association to serve for the year 1943 were elected at a meeting of the board of directors of the organization in Tulsa, Dec. 4.

They are: J. C. Happenny, president, Oklahoma Power & Water Co., Sand Springs, president; E. C. Joullian, president, Consolidated Gas Utilities Corp., Oklahoma City, first vice president; George McLean, Oklahoma Gas and Electric Co., Oklahoma City, second vice president; D. S. Kennedy, Oklahoma Gas and Electric Co., treasurer; and Kate A. Niblack, Oklahoma City, secretary.

New directors: three years term: Glenn C. Kiley, vice president, Oklahoma Gas and Electric Co., Oklahoma City; Frank B. Long, vice president, Oklahoma Natural Gas Co., Tulsa; one year term: J. P. Arnold, Public Service Co. of Oklahoma, Tulsa; C. A. Breitung, Oklahoma manager, Southwest Natural Gas Co., Ada; George A. Davis, president, Oklahoma Gas and Electric Co., Oklahoma City; R. K. Lane, president, Public Service Co. of Oklahoma, Tulsa and J. C. Happenny. Hold-over directors are: A. F. Potter, manager, The Gas Service Co., Bartlesville; S. I. McElhoes, vice president, Southwestern Light & Power Co., Chickasha; W. L. Woodward, president, Zenith Gas System, Inc.; and E. C. Joullian.

■ ■

Sales Managers Discuss Post-War Selling Themes

"Thinking of the Future in Terms of the Present" was the theme of the New England Gas Association sales managers' conference held Jan. 9 at the University Club, Boston.

Principal speakers at the meeting included C. George Segeler, engineer of utilization, American Gas Association, who spoke on the subject, "Competition Plus Complacency=?" William J. Grover, director of sales promotion and advertising, Surface Combustion Corp., whose topic was "Sales Planning by Gas Appliance Manufacturers;" and George F. B. Owens, who spoke on "Sales Planning by Gas Companies."

■ ■

J. E. Perkins Elected Head Of Oklahoma Accountants

J. E. Perkins, Ponca City, Okla., has been elected chairman of the Natural Gas Accountants Association of Oklahoma. He succeeds H. O. Buoen, of Tulsa. Other officers of the association are: W. J. McNally, vice chairman, Skiatook; E. J. Newlin, Oklahoma City, secretary-treasurer; directors: W. E. Slaughter, Tulsa; W. L. Watkins, Bartlesville and M. S. Crosley, Oklahoma City.

■ ■

FPC Report of Electric Energy for Public Use

The Federal Power Commission's latest report on the production of electric energy in the United States reveals that electric energy produced for public use in October, 1942 totaled 16,486,000 kwhr., an increase of 9.9% over production in October, 1941.

According to the report, for the 12 months ended Oct. 31, 1942, total production for public use was 181,745,777,000 kwhr., an increase of 12.7% over the 161,224,458,000 kwhr. produced in the 12 months ended Oct. 31, 1941.

on the *NIGHT SHIFT* in *YOUR HOME...*

EVERYBODY IS A STUDENT THESE DAYS!

You and your family are putting in extra hours of exacting eye work.

1. High school study is intensified.
2. College courses are shortened and intensified.
3. First Aid work requires constant refresher-study.
4. New duties and review keeps Air Raid Wardens busy.
5. Red Cross Nursing Courses require intensive study.

★

Keep eyes alert with ADEQUATE LIGHT!

Days do not end with sundown under the pressure of a nation at war. Time is valuable today. It must not be wasted. Night hours are full of added responsibilities.

You and your family must put in more time with household chores, sewing, mending clothes, knitting or dressmaking. Eyes are busy reading fine print, studying, making notes or writing letters to friends and relatives in the service.

Guard against eye strain during these busy night hours in your home. See that your home has adequate light for easier seeing and more cheerful surroundings. Check up the lighting in your home now before the long, darker days of winter begin.

P·G·and E·
PACIFIC GAS AND ELECTRIC COMPANY

BUY U. S. WAR BONDS REGULARLY AND OFTEN

Hearing on Pipeline Case Postponed Until January 18

The Federal Power Commission announced Dec. 12 its order postponing from Dec. 15 to Jan. 18 a hearing on an application by the Tennessee Gas & Transmission Co., Chattanooga, Tenn., for a certificate to construct and operate a natural gas pipeline from southwestern Louisiana gas fields to Nashville, Chattanooga, Knoxville and other Tennessee communities.

Orders were also announced permitting intervention in the proceedings by the following interests: Department of Conservation of the State of Louisiana; United Mine Workers of America; Brotherhood of Railroad Trainmen; Railway Labor Executives' Association; Kentucky-Tennessee Natural Gas Corp.; the City of Cleveland; the Gulf, Mobile & Ohio Railroad Co.; Louisville & Nashville Railroad Co.; Illinois Central Railroad Co.; and the Nashville, Chattanooga & St. Louis Railway.

The commission also denied an application, filed Dec. 4, 1942, by the Kentucky-Tennessee Natural Gas Corp. asking for suspension of all hearings on the proposal until after the termination of the present war.

■ ■

Specifications for Gas Floor Furnaces Approved

Standard minimum specifications for gas floor furnaces of the gravity circulating type have been approved by the American Standards Association (Commercial Standard CS99-42.) With the latest American Standard Approval Requirements for Central Heating Gas Appliances (ASA.: Z21.13-1940) as basic prerequisites, this standard covers construction and installation requirements for gravity circulating type gas floor furnaces, including those having single or dual wall register outlets, for use with natural, manufactured, mixed and liquefied petroleum gases. This new standard, which was developed by the National Bureau of Standards includes the sizing, placement, general installation requirements, venting, gas connections and methods of certifying compliance with the standard.

■ ■

Servel Service Manual Offered LP-Gas Industry

A comprehensive 32-page booklet prepared by Servel, Inc., Evansville, Ind., is available to gas companies to educate domestic users on the importance of maintaining refrigerators, ranges, and other gas appliances in adequate service for the duration.

The pamphlet is also available to liquefied petroleum gas dealers or distributors in quantities at the nominal charge of two cents per copy.

■ ■

Reduced Gas Rate for Des Moines Sought by City

A reduction in the wholesale natural gas price is being sought by the Des Moines city council from the Northern Natural Pipeline Co., which supplies natural gas to the city-owned utilities.

In a letter to the firm, Mayor John MacVicar pointed out that the company has recently reduced rates to users in southern Iowa.

G. W. Martin and R. G. Soper, general superintendent and president respectively of Dallas Gas Co., look on while L. T. Schmid, foreman of the garage, and Harry Deuser, warehouse foreman, fit together two lengths of wooden gas main dating back to approximately 1874. This gas main was dug up at Lamar and Poydras streets in Dallas and is believed to have been laid in the street by the Dallas City Gas Light Co. which served the city gas principally for lighting purposes. The pipe is 8 ft. long and 6 in. square with a 3-in. bored inside diameter. The joints are held together by a wood tapered ferrel extended 3½ in. into each pipe length. Sections of the pipe have been presented to the Dallas Historical Society.

N. Y. State Natural Gas Acquires Keuka Company

The New York State Natural Gas Corp. was authorized by FPC on Dec. 22 to acquire and operate the facilities of Keuka Construction Corp., Auburn, Cayuga County, N. Y. The Keuka company, which has its principal offices in Pittsburgh, Pa., supplies gas at wholesale to the New York State Electric & Gas Corp. Application for the authorization was filed by the New York State Natural Gas Corp. on Nov. 19, 1942.

The order states that the dissolution of the Keuka company will result in a saving of manpower by eliminating the keeping of books and records and the preparation and filing of reports.

The authorization will expire unless acted upon within 90 days and certain reports must be submitted to the commission in connection with the transaction.

■ ■

Over 5000 Gas Meters Lost in Cincinnati Fire

Fire which swept through the shops and laboratories of the Cincinnati Gas & Electric Co., Cincinnati, on Dec. 14, destroyed much irreplaceable gas and power equipment. The loss included the city's entire reserve supply of approximately 5000 gas meters. Arthur Cherry is gas distribution manager.

■ ■

Discount Periods Doubled By Sioux City Gas Co.

The Sioux City Gas & Electric Co. has doubled its number of discount periods which have been in effect for the last 20 years.

The three districts have been subdivided into six in order to spread the cashiers' work. The increase in the number of customers and war conditions were given as the reason for the changes.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

A MAXIMUM OF ENGINEERING PERFORMANCE

H-M Low Pressure Gas Regulator. Sizes from ⅜-in. to 2-in.

A Low Pressure Gas Regulator with Efficiency at Its Highest

This Same Precision Production

Is Now Being Used in Making War Materials

To Beat the Axis

Low Pressure Regulators Are Still Available in All Sizes

H-M REGULATOR COMPANY
THERMO CONTROL CO.

800 EAST 108th STREET LOS ANGELES, CALIF.

California Railroad Commission Orders P. G. & E. to Reduce Its Rates

THE California Railroad Commission Dec. 29 ordered Pacific Gas & Electric Co., San Francisco, to reduce natural gas rates $1,326,000. The formal opinion and order was handed down after several hearings before Commissioner Carl C. Baker.

This is the second reduction in Pacific Gas & Electric Co.'s gas rates ordered by the commission within the last year and is predicated upon an increase in the estimated natural gas reserves, particularly in the Rio Vista and Kettleman Hills fields. The rate reduction represents a complete overhauling of the basic rate schedules on the system.

With the new reduction, San Francisco will have the second lowest gas rate of any of the 25 major cities of the nation, being exceeded only by Pittsburgh.

The new rates are applicable over the entire Pacific Gas & Electric Co. system and are effective on meter readings taken on and after Feb. 15, 1943. The amount of rate reduction by communities varies, as the new classification recognizes population, customer density, heat quality of gas supplied, earnings and other essential rate-making factors.

In the northern California area the new rates are divided into six zones ranging from San Francisco, which will have the lowest basic rate, to the rural area with the highest rate, while in the San Joaquin power division the new rates range from Fresno, which will have the lower rate, to the rural or unincorporated areas with the higher rate.

During the hearings testimony was submitted on the incorporation of the automatic heating value clause in all general service rates, as well as rate changes in the firm industrial and commercial building heating tariffs for the reduction in the heating value of the gas served. The exhibit showed that for the general service customer an automatic provision is set up wherein rates will increase or decrease 4% for each 50 Btu. change; for the firm industrial schedules, 3%; for the commercial building heating, 2%.

■ ■

Annual Report Shows Increase In Hydro-Electric Power Production

According to an annual report issued by Commissioner of Reclamation John C. Page on Dec. 14, hydroelectric power has gained more than 400,000 kw. (43%) or enough to take care of a city of a million people.

The 1942 gain in hydro power has raised the total installed capacity in 28 electric plants on 17 reclamation projects in 11 western states to almost 1½ million kilowatts. During the year three new generators were installed in the Grand Coulee Dam power plant on the Columbia river in Washington, increasing total capacity to more than one-third of a million kilowatts. Another large generator was installed at Boulder Dam in the Arizona-Nevada territory on the Colorado river, raising the total number of generators in operation to 10 and making the largest array of hydro power ever synchronized into action at one place. This plant has a total capacity of more than three-quarters of a million kilowatts.

Plans are being completed for the installation of new generators at Boulder, Parker and Grand Coulee dams which will add another 400,000 kw. within eight months. These new generators will increase the total capacity of power plants on reclamation projects to nearly 2 million kilowatts. Capacity is expected to reach nearly 2½ million kilowatts by May, 1944.

■ ■

FPC Prescribes Form for Annual Reports Of "A" and "B" Natural Gas Companies

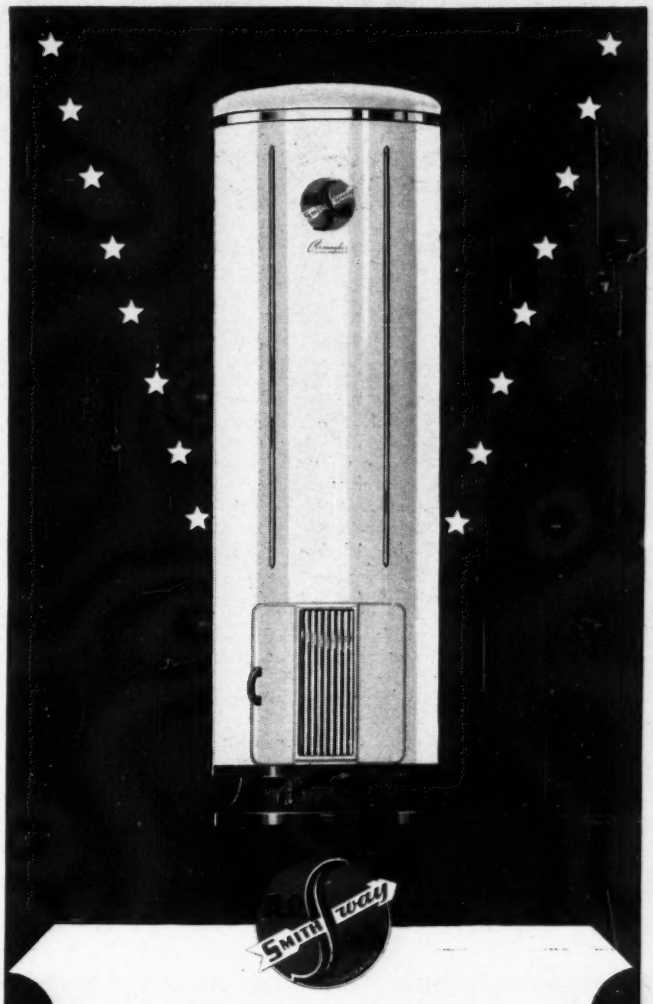
The Federal Power Commission, acting under authority granted by the Natural Gas Act, has ordered that natural gas companies in Classes A and B as defined by the act use FPC Financial and Statistical Report Form No. 133 in the compilation of annual reports. The companies are ordered to file with the commission an original and two conformed copies for 1942 and each year thereafter before the last day of the third month following the close of the calendar year or other prescribed fiscal year.

■ ■

Cold Spell Brings Brief Gas Shortage to Battle Creek Area

A recent cold spell in Battle Creek, Mich., resulted in a gas shortage for industrial and commercial customers in that area, according to a release from the War Production Board.

The Battle Creek Gas Co. has already curtailed gas deliveries to some of its customers under the provisions of WPB Limitation Order L-174, which provides for a schedule of curtailment of gas deliveries during periods of shortage of manufactured gas.



SMITHway

GOOD WILL
To Outlast the War

You probably sold quite a number of SMITHway Permaglas Water Heaters before December 7, 1941. For that, you can be doubly glad. First, because customers who bought them will receive trouble-free service that is appreciated these days when any kind of trouble is double-trouble. Second, because a customer remembers where a product of outstanding merit was purchased long after its price is forgotten.

SMITHway Permaglas
GLASS LINED
WATER HEATERS

A. O. SMITH Corporation
Milwaukee, Wis.

PEOPLE

Guy W. Wadsworth, Jr., vice president, Southern Counties and Southern California Gas Companies, Los Angeles, has been commissioned as a major in the United States Army. He may be stationed in Washington on the staff of General Brehon Somervell, chief of the service of supply, doing personnel work.

G. W. Wadsworth, Jr.

Mr. Wadsworth has gained national recognition for his pre-employment system of testing which is now used throughout the nation. Currently, the Wadsworth system is being used in testing applicants for jobs in war industries.

Prior to his appointment as vice president of the California concerns, Mr. Wadsworth was personnel manager of Southern Counties Gas Co.

• •

Earle J. Machold was elected president and a director of Niagara Hudson Power Corp., New York, on Sept. 24 to succeed the late **Alfred H. Schoellkopf.** The new president has been connected with the Niagara Hudson system for 12 years as legal counsel for the companies.

He obtained his law degree from Syracuse University in 1927 and was admitted to the New York State bar in 1928.

• •

D. A. Hulcy, president, Lone Star Gas Co., Dallas, Texas, was unanimously re-elected vice president of the Dallas Chamber of Commerce for the 1943 term. Mr. Hulcy has also been appointed campaign chairman of the 1943 Dallas War Chest.

• •

When the Salvation Army launches its 1943 campaign in New York City it will have **Clifford E. Paige,** president, Brooklyn Union Gas Co., at the helm. A goal of $525,000 has been set for this year's drive.

• •

At a meeting of the directors of the Arkansas Natural Gas Corp. and the Arkansas-Louisiana Gas Co., **Frank A. Willison** was elected to the board.

• •

Jewel Hensley, home service director of The Gas Service Co., Topeka, Kan., has been chosen as a member of the executive committee on nutrition in an organization under the supervision of the Topeka Council of Social Agencies.

• •

When **Walter C. Teagle** retired as chairman of Standard Oil Co. of New Jersey, **R. W. Gallagher** was elected to that position. Mr. Gallagher was formerly vice president and a director of the company, and was president of the American Gas Association for the term 1931-1932.

R. W. Gallagher

Mr. Gallagher has been connected with Standard Oil since 1896 and in 1926 was chosen president of the East Ohio Gas Co., Cleveland, a subsidiary of Standard. In 1933 he became a member of the Standard board to take charge of all the company's natural gas interests.

• •

Officials of the Monongahela West Penn Public Service Co., Fairmont, W. Va., have announced several changes in the company personnel and the creation of a new operating division.

Under the new set-up the Eastern territory will be divided into separate Fairmont and Morgantown operating divisions and Grafton district operations will be transferred from Fairmont to Morgantown.

Robert H. Pell, Fairmont special representative, has been named manager of the new Fairmont division, with **Paul H. Sommer,** former Eastern area manager, continuing as manager of the greatly enlarged Morgantown division.

G. Blair Blackburn, Morgantown district manager, has been selected as successor to the late **W. E. Douglass** as Panhandle division manager; and **John F. Hopkins** has been transferred as Grafton district manager to Fairmont to replace Mr. Pell as special representative. **Harold R. Fetty,** Morgantown residential sales supervisor, was transferred to the managership of Grafton district. W. Carlisle Wade of Fairmont area staff was made special representative and assistant to Division Manager Sommer.

• •

Louis Ruthenberg, president of Servel, Inc., Evansville, Ind., was re-elected president of the Indiana Chamber of Commerce at the recent annual meeting of that organization in Indianapolis.

• •

Arthur F. Bridge, president, American Gas Association, has reappointed **James D. Dingwell, Jr.,** assistant vice president in charge of personnel relations of the Washington Gas Light Co., Washington, D. C., to the position of chairman of the Committee on Personnel Practices of the AGA.

It was under Mr. Dingwell's direction that the committee issued the outline, "The A, B, C of Occupational Deferment Procedure," as a guide to companies seeking deferments for essential employees.

Mr. Dingwell has been associated with the Washington Gas Light Co. since 1933, and prior to that time he was connected with the Blackstone Valley Gas & Electric Co. and the Pawtucket Gas Co.

• •

Chester N. Chubb, president of the San Antonio Public Service Co., San Antonio, Texas, from 1935 until the company changed hands recently, and since that time secretary of the City Public Service Board now in control of these properties, has resigned as secretary and will resume a position with the

DON'T DIG TRENCHES

...PUSH PIPE WITH GREENLEE HYDRAULIC PIPE PUSHERS

You don't waste time and money digging trenches when installing pipe underground with Greenlee Hydraulic Pipe Pushers. There's no pavement cutting, no tunneling, no backfilling, no repaving. Only a short trench is dug to accommodate the pusher and pipe, and one or two men pumping the handles can easily push pipe under sidewalks, streets, highways, embankments, and railroad tracks. No extra equipment of any type needed . . . the powerful hydraulic units do the actual pushing. Built in two sizes . . . the No. 790 with a 20-ton hydraulic unit for 1¼ to 4-inch pipe . . . and the No. 795, with 75 tons of power, for drainage ducts, concrete sewer pipe, and pipe beyond 4 inches. Write for more information about the complete Greenlee Line of Hydraluic Pushers.

FAST . . . EASY
PORTABLE
75 Tons Power

No. 795
Hydraulic Pusher

Send for
NEW PUSHER BULLETIN S-117

GREENLEE TOOL CO.
1941 COLUMBIA AVENUE • ROCKFORD, ILLINOIS

American Light & Traction Co., former owner of the San Antonio Public Service Co.

Mr. Chubb will continue as vice president of the American Light & Traction Co. and will represent that organization in San Antonio until all matters relating to the sale are completed.

• •

John W. West, Jr., secretary of the residential section of the American Gas Association, has been appointed assistant managing director of the association, it was announced Dec. 9 by **Alexander Forward**, managing director.

John W. West, Jr.

Mr. West joined the AGA in 1925 when he was first engaged in safety activities which are still under his supervision, and subsequently was promoted to the positions of field representative and secretary of the commercial section, later known as the residential section. The new secretary is a graduate of Virginia Polytechnic Institute, Blacksburg, Va. He was at one time in charge of purchase and measurement of natural and casinghead gas in Oklahoma and Texas fields for the Tidal Oil & Gas Co. in Tulsa, Okla. In 1920 he returned to Virginia to become chief engineer of the commission in charge of public utilities. He joined the AGA Feb. 1, 1925.

• •

C. L. Follmer, manager of the rate research department of the Consolidated Gas, Electric Light & Power Co. of Baltimore, Baltimore, Md., has been appointed chairman of the Rate Committee of the AGA for the third consecutive year.

Since the outbreak of the war the committee has devoted its time to consideration of current developments on rates and related matters which pertain to wartime operations. The entire personnel of the 1942 committee has been reappointed.

Mr. Follmer has been on the staff of Consolidated Gas, Electric Light & Power Co. since 1924 and has been manager of the rate research branch since 1938.

• •

Edward Reynolds, president, Columbia Gas & Electric Corp., New York, has been appointed a special assistant to the surgeon general of the army, Major General **James C. Magee**, according to an announcement by the War Department. In his new capacity, Mr. Reynolds will have the supervision and direction of the non-professional functions of the surgeon general's office, including the procurement of medical supplies for the army.

Mr. Reynolds graduated from Harvard in 1915 and served as an officer in the navy during World War I.

• •

Eric L. Kohler has been appointed executive officer of the Petroleum Administrator for War, according to a recent announcement from that office. In his new capacity, Mr. Kohler will serve as assistant to the deputy administrator in the handling of organizational and administrative problems with PAW.

Mr. Kohler was previously engaged in the same type of work with WPB. From 1938 to 1941 he was comptroller of the Tennessee Valley Authority at Knoxville, Tenn., having entered government service after 20 years' experience as a consulting engineer in Chicago.

Jane Tiffany Wagner, formerly with Servel, Inc., Evansville, Ind., has joined NBC, where she will broadcast a woman's service program.

• •

Dr. Blaine B. Wescott, chief of the materials and products chemistry division of the Gulf Research and Development Co., Pittsburgh, Pa., has been appointed a member of the sectional committee on pipe threads of the American Standards Association. The scope of the committee covers the American (Briggs) standard taper and straight pipe threads, plumbers' threads, threads for electrical conduit and threads for thin tubes.

• •

Further honor came to **Mary E. Dillon**, president and board chairman of the Brooklyn Borough Gas Co., Coney Island, N. Y., and the nation's only woman head of a major utility firm, when Mayor F. H. LaGuardia of New York appointed her a member of the board of education.

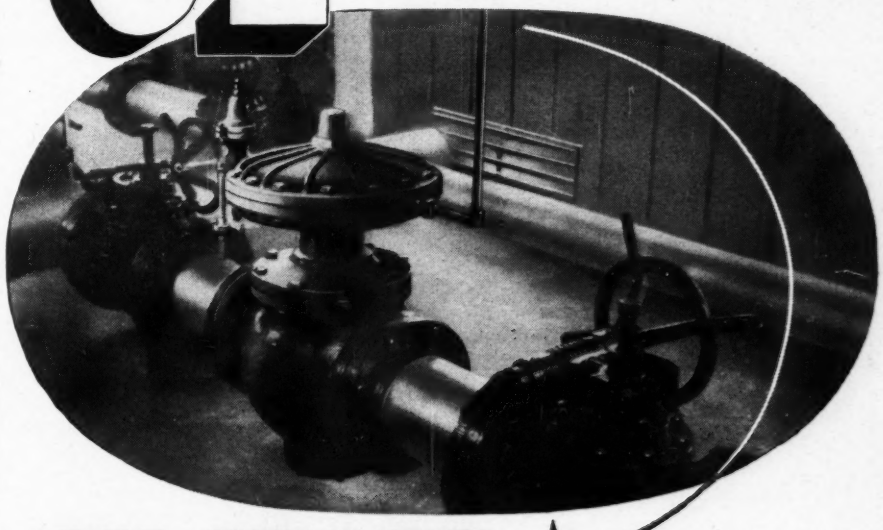
Miss Dillon, who has taken a very active interest in the civic, business and charitable life of her district, became head of the Brooklyn Borough Gas Co. in 1926. She was first employed by the company as a clerk in 1903 and later was promoted to general manager and vice president.

• •

Harvey Edmund has been elected vice president and general manager of Coast Counties Gas & Electric Co., Santa Cruz, Calif. He was for many years sales manager of the company, and during 1941 was a director of the Pacific Coast Gas Association.

C-F *

Pilot Loaded
REGULATORS



ON GUARD

at the critical points

C-F Pilot Loaded Regulators insure accurate control of pressures where uninterrupted service must be maintained for round-the-clock production. Perfect-circle pounds-to-pounds regulation of delivery pressures from 1 to 200 lbs. Suitable for transmission line, town border, or industrial installations. No bleeds to atmosphere. Simplified design, with one adjustment only, easy to install—no factory man needed. Working parts entirely enclosed, yet readily accessible; rugged construction, nothing intricate to wear or to require expert attention. Sizes 1" to 2½" screwed, 2" to 10" flanged. C-F Regulators meet all pressure-control needs of industry. Submit your requirements for a specific recommendation.

*

THE CHAPLIN-FULTON MFG. CO.

38 PENN AVE. PITTSBURGH, PA.

Be

SPECIFIC

in your measurements

of the

SPECIFIC GRAVITY

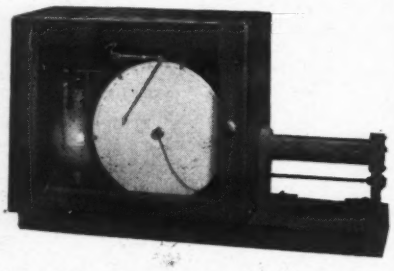
of Continuously

Flowing Liquids

Use **ARCCO-ANUBIS**

Liquid

Gravitometers



Installed by Hundreds in Pipelines and Refineries of All Major Companies

Automatic temperature compensated to indicate or record the specific gravity of a small, continuously flowing sample of liquid as of 60° F. (or other predetermined temperature) regardless of actual temperature. Sample may be under several hundred pounds pressure, but differential pressure of ½ pound from any source is enough to flow liquid through instrument, with complete purge effected in slightly over one minute. Thus, changes in specific gravity are shown with great accuracy and minimum time lag. Foreign liquids purged and gases exhausted automatically. Perfectly adapted to high pressure operation.

SEND FOR BULLETIN No. 111-A

AMERICAN RECORDING CHART CO.

3113 E. 11th St., Los Angeles, Calif.

510 So. Lansing Ave., Tulsa, Okla.

Obituaries

David C. Johnson

David C. Johnson, vice president, Consolidated Edison Co. of New York, and president of New York Steam Corp., died Dec. 19 at his Manhattan home of a heart attack.

Mr. Johnson, born in Brooklyn in 1885, attended Polytechnic Preparatory School and Stevens Institute of Technology, from which he graduated in 1906 as a mechanical engineer. On leaving college he was employed for a brief time by the Astoria Light, Heat & Power Co., one of the predecessors of Consolidated Edison Co. Soon after the National City Co. was organized, Mr. Johnson was appointed its manager of public utilities to investigate and negotiate the financing of many large public utility firms in this and other countries.

In 1922 he was elected a director of New York Steam Corp.; in 1927 a vice president, and in 1928 president of that company. In 1937 he was elected a vice president of Consolidated Edison Co., and later a trustee. Mr. Johnson was also a director of the Long Island Railroad Co. and a trustee of Stevens Institute of Technology.

• •

Frank D. Cadwallader

After an illness of only three days, Frank D. Cadwallader, vice president in charge of public relations, Boston Consolidated Gas Co., Boston, Mass., died on Nov. 29 at the age of 60.

Mr. Cadwallader was an enthusiastic and active worker on the American Gas Association's national advertising program and was well known throughout the industry, having been associated with it since early in the century.

In 1912 he became the New England representative of the Standard Gas Equipment Corp. of New York. It was in 1927 that he joined the Boston Consolidated Gas Co. as vice president in charge of sales, a position he held until 1937 when he was appointed to the public relations department.

Mr. Cadwallader was the first treasurer of the New England Gas Association, being elected in 1926 and serving until 1941.

• •

William Stamps Farish

William Stamps Farish, president of the Standard Oil Co. of New Jersey, passed away Nov. 29 at the age of 61. He was ill only a few hours. Mr. Farish has been directing the affairs of his company since 1937. He started his career in the petroleum industry at Beaumont, Texas, in 1901, shortly after graduating from the University of Mississippi. He became president of the American Petroleum Institute in 1926 and served as a director thereafter until his death.

• •

Paul R. Jones

Paul R. Jones, director and secretary of Cities Service Co., Kansas City, Mo., died Nov. 10 in a New York hospital, following an attack of pneumonia.

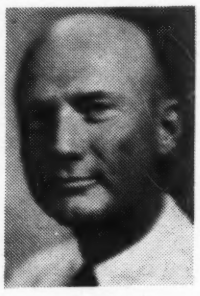
Born in Cincinnait, 1876, Mr. Jones started with the Doherty organization in 1899 as a lamp boy for the Denver Electric Light Co. Prior to becoming secretary of Cities Service Co. in 1910, he was secretary of the Lincoln Gas and Electric Co.

At the time of his death, Mr. Jones was a director and secretary of Cities Service Power and Light Co.; Empire Gas and Fuel Co., a director and vice-president of Arkansas Natural Gas Corp.; and a director of Cities Service Oil Co., Pa.; and Federal Light and Traction Co.

• •

Mabon R. Roper

Mabon R. Roper, 50, president, Geo. D. Roper Corp., Rockford, Ill., and well-known leader in the gas stove and appliance industry, died suddenly at his home Dec. 10. Mr. Roper had taken a very active part in the affairs of his company up until the time of his death.



M. R. Roper

Mr. Roper was the son of Mr. and Mrs. George D. Roper and was born in Rockford, Ill., where he lived all his life. He was a graduate of Cornell University in mechanical engineering and was first employed in 1914 by the Eclipse Gas Stove Co., owned by his father, and which later became the Geo. D. Roper Corp. Mr. Roper gleaned first-hand knowledge of the company's operations by working in every capacity from errand boy to credit manager and secretary, and when his father died in 1925 he was well equipped to assume the presidency. Besides being president and a director of the Roper Corp., he was, at the time of his death, a director of Blackhawk Engineering Co., Roper subsidiary.

Mabon Roper was a member of the American Gas Association, Association of Gas Appliance and Equipment Manufacturers, Illinois Manufacturers Association, Founders and Patriots of America, Illinois Society of Sons of the American Revolution, Military Order of the Loyal Legion of the United States, Gild of Ancient Supplers of Gas Appliances, Skills, Gins, Accessories and Substances, University Clubs of Rockford and Chicago, and Rockford Country Club.

The Geo. D. Roper Corp. was one of the nation's first major factories to convert from peacetime to a 100% war production program.

• •

Alfred Leon Francis

Alfred Leon Francis, who for the past four years was associated with the southwestern office of Geo. D. Roper Corp., passed away October 28 following a heart attack. A native Texan, he started to work in the merchandising business at the age of 18 and in 1930 decided to concentrate his efforts on the sale of household appliances. For the past two years he has directed all his time to the sale of gas appliances, including Roper gas ranges and has spent much of this time traveling throughout West Texas and New Mexico. Mr. Francis maintained offices in Lubbock, Texas.

• •

J. H. Hartog

John Hendrick Hartog, for 16 years commercial manager for Portland Gas & Coke Co., Portland, Ore., passed away at his home in Seattle on Sept. 22.

Mr. Hartog, who was 66 at the time of his death, has of late been associated with a shipbuilding concern.

Report Estimates Gas Reserves in California

THE first official estimate on the natural gas reserves of the state of California ever made has been completed and published by the Railroad Commission of the State of California and the Department of Natural Resources Division of Oil and Gas. The report covers a discussion of the several fields in the state of California which were producing gas and oil, or gas alone, on Jan. 1, 1941, together with an estimate of the total future recoverable gas reserves in those fields as of the basic date. Also included are additional known reserves during the year 1941, as well as production during the year and a summary and estimate as of Jan. 1, 1942.

Dr. John F. Dodge, professor of petroleum engineering at the University of Southern California, acted as consultant on the preparation of the estimates. He declared that he believed that California fields still held slightly less than 12 trillion M c. f. of natural gas, which would last about 30 years at the present rate of consumption. He added that the Rio Vista gas field, between Sacramento and San Francisco, the largest in the state of California, may have 20% more gas than its estimated reserve. Dr. Dodge also believes that northern California will be able to discover and turn into production new gas fields.

"The entire report is deemed of extreme value in that it definitely makes known the probable reserves that are available for the future requirements of the people of California and accordingly makes possible a more intelligent plan for their utilization," says Roy A. Wehe, gas and electric engineer, Railroad Commission of the State of California.

■ ■

Twelve Contracts Let on Eastern Emergency Pipeline

Selection of 12 contractors for the job of constructing the 857-mile eastward extension of the Texas-East Coast war emergency pipeline was announced by Petroleum Administrator for War Harold L. Ickes.

The line will be constructed of 24-in. pipe as far as Phoenixville Junction, Pa., with two 20-in. branches extending from that point to Bayway-Bayonne, N. J., and to Philadelphia. Completion of the Illinois-East Coast extension from Norris City, Ill., to the New York-Philadelphia refining areas is expected by midsummer.

The 12 contractors receiving letters of intent were, in order of their contract sections east from Norris City, Ill.: Sheehan Construction Co., Tulsa, Okla.; Ray Smity, El Dorado, Kan.; Anderson Bros., Tulsa, Okla.; C. S. Foreman, Kansas City, Mo.; Bechtel & Dempsey, San Francisco and Tulsa; Williams Bros., Tulsa; O. C. Whittaker Co., Ft. Worth, Texas; I. C. Little, Dallas, Texas; Oklahoma Contracting Co., Dallas, Texas; Midwestern Engineering & Construction Co., Tulsa; Jones & Brooks, Oklahoma City; and Exeter Construction Co., Camp Hill, Pa.

■ ■

Research Project on Gas Peak Loads Under Way

On a research project concerning gas peak loads and increasing capacity, Prof. O .L. Kowalke of the University of Wisconsin has working with him James R. Felix and Robert A. Buckley.

Mr. Felix, as senior apprentice, has been sponsored by the Wisconsin Utilities Association under a gas fellowship recommended by the Gas Section. Mr. Buckley, also a senior apprentice, was sponsored by the Wisconsin Alumni Research Foundation.

The young men are making a survey of literature on factors contributing to the yield of gas; proper conditions of temperature in a carburetor and superheater; the manner and effectiveness of dispension of the oil, and the length of time the oil vapors are in the heated zone. To date no laboratory tests have been made.

■ ■

Appliance Index Issued

The American Gas Association Testing Laboratories have issued a new directory of approved gas appliances and listed accessories, including war emergency models. This list supplements the Oct. 1 issue of the directory and contains listings of all appliances approved during the month of Nov., 1942.

Plants Equipped With Coal Stand-bys Denied Gas Fuel

The War Production Board on Dec. 12 ordered The Cities Service Gas Co., Kansas City, Mo., to cease gas deliveries to all plants in its system with coal stand-bys and to all oil refineries equipped with any type of auxiliary facilities.

When complete conversion of the system is made to comply with the new order it will be a reduction of some 40,000,000 to 50,000,000 cu. ft. of gas daily, the equivalent of 2500 tons of coal per day, according to Ben C. Adams, president of Cities Service.

Cities Service distributes gas in Missouri, Kansas, Nebraska and Oklahoma.

ON THE JOB FOR OVER 65 Years

The above prize winning photo is by I. F. Patt of Providence Gas Co.

Back in the days when the telephone was still a curiosity, Connelly Iron Sponge was supplying the purifying needs of the leading gas companies of the East. And, like the telephone, its use has grown with the years until today it is depended upon throughout the country wherever the utmost in purification efficiency is demanded.

Its extra high capacity and remarkable revivifying properties insure exceptionally long life and its cost per 1000 feet of gas is unusually low. In the face of today's unprecedented demands, these qualities are more important than ever, and records prove that Connelly Iron Sponge is maintaining purification standards despite increased daily loads.

You'll find it profitable to get the facts about Connelly Iron Sponge. Connelly engineers will gladly consult with you without obligation.

Connelly IRON SPONGE & GOVERNOR COMPANY
CHICAGO, ILL. • ELIZABETH, N. J.

ABSTRACTS

ABSTRACTS from papers presented at the Los Angeles meeting of the petroleum division of the American Institute of Mining and Metallurgical Engineers, Oct. 15-16, 1942.

A Method of Approach to Determine the Economics of Pressure Maintenance—N. van Wingen, senior production engineer, Richfield Oil Corp., Los Angeles. This report describes one possible method of determining the economics of pressure control and maintenance operations as applied to deep, high pressure, low gas-oil ratio reservoir. The results of the analysis indicate that a premise of increased recovery need not be predicted to justify economically such methods of operation. The entire problem of determining the feasibility of pressure maintenance operations is thus resolved into a consideration of the following:

1. A determination of increased recoveries, resulting from pressure control and maintenance as against deferred sales for the gas, including a consideration of the economic feasibility of purchasing gas for injection purposes.
2. An investigation of the extent to which it will be possible to control the expansion of the secondary gas cap so that no appreciable by-passing of the recycled gas will result.

Use of P. V. T. Data in Formulating the Production Policy for an Oil Reservoir—W. Tempelaar Lietz, Shell Oil Co., Inc. Available data indicate that there is a relationship between well spacing and ultimate oil recovery of such a nature that with closer spacing the oil recoveries are higher. Accordingly, to obtain the full benefit of any spacing, it is necessary to maintain the pressures in each drainage area at an equal level in order to prevent movements of fluid from one area to the other.

It has been demonstrated that the withdrawal of equal subsurface volumes from unit sand volumes does not necessarily lead to the desired result and that the relative amount of gas present in the portion of the reservoir drained by the well has to be taken into account.

Volumetric and Viscosity Studies of Gas and Oil From the Santa Maria Valley Field—R. H. Olds, B. H. Sage and W. N. Lacey, all of the California Institute of Technology, Pasadena, Calif. Determinations were made of the viscosity of the liquid phase and of the volume of mixtures of gas and liquid samples from the production trap of a well in the Santa Maria Valley field in California. Measurements were made at different temperatures and at pressures up to 5000 psi.

Primary Pressure Control—Will It Increase Recovery?—T. H. Acres, Richfield Oil Corp., Los Angeles. The following advantages may be reasonably expected from a method of production under primary pressure control according to the degree of pressure maintenance achieved:

1. Keeping gas in solution, maintaining the oil fluidity, reducing resistance to flow into the well bore and allowing production to lower economic limits of residual oil saturation.
2. Prevention of shrinkage of reservoir oil, permitting the "driving power" of the gas moving toward the well bore to be used most efficiently, allowing quantities of oil to be recovered which would otherwise be lost.
3. Prevention of encroachment of edge and bottom water, eliminating expensive remedial work and possible trapping of otherwise recoverable oil.
4. Prevention of oil from moving into the gas cap pore spaces causing such oil to become unrecoverable.
5. Maintenance of capacity of pool to produce at maximum rates by preventing dissipation of energy.
6. Recovery of retrograde condensates of the gas cap which would be lost through normal pressure depletion.
7. Maintenance of reservoir pressure, conserving its energy for use in flowing oil to the surface, thus shortening the expensive artificial lift stage of production.
8. Lesser development cost through fewer wells to exploit pool.
9. Elimination of the necessity for expenditures for secondary recovery operations.
10. Greater ultimate recovery through application of all of above principles.

Review of Recovery Experience—F. C. Marshall, assistant to vice president, Continental Oil Co., Ponca City, Okla. Recovery factors for California oil fields vary in different pools and also between wells in the same pool. That the range of recoveries has been between 50 and 500 bbl. per acre foot.

In general, fields with similar sand conditions and reservoir control, thin sands have greater recovery per acre foot, probably because of less by-passing due to gas and water expansion. That for fields of water drive type, recovery is not materially increased by close drilling, although recovery per acre foot is greater than for fields of gas expansion type. The factor of acre foot recovery is a relative basis for comparison of performance between fields, within an oil province, and may be used in making better estimates of ultimate production for new fields.

Speculations on the Prediction of Reservoir Behavior From Laboratory Data—E. C. Babson, production engineer, Union Oil Co., Santa Fe Springs, Calif. In order to explore the possibility of predicting reservoir performance from laboratory data, behavior of a hypothetical low permeability reservoir has been estimated by applying data and methods currently available in the literature. A method of calculating productivity index decline is discussed, and recoveries by internal gas drive, external gas drive and water drive are estimated.

The Problem of Increasing Recovery—Everett G. Trostel, conservation engineer, Office of Petroleum Coordinator for War, Los Angeles. Increasing war demands for additional production of crude oil, coupled with the scarcity of materials used in drilling new wells, necessitate greater emphasis upon increasing recovery by improved techniques. Several factors relating to improved recovery practice are discussed. Recent improvement in California production practices is reviewed. Need for pooling of the knowledge and experience of all operators is stressed, as well as the need for further research. The paper concludes with a statement that the problem of increasing recovery is a practical one which pays off in dollars and cents and that its solution is a "must" during war.

The actual production mechanics which should lead to high ultimate recovery are generally accepted by the petroleum engineering profession to be:

1. Maintain reservoir pressure above the bubble point or, at least, at its practicable maximum.
2. Produce with a minimum gas-oil ratio.
3. Favor production at a low rate.
4. Produce with a minimum water-oil ratio.
5. Maintain a uniform or balanced pressure pattern throughout the reservoir:
   a. To avoid pressure sinks.
   b. To prevent uneven edgewater encroachment.
   c. To avoid gas-cap contraction.

Radioactivity Logging in California—John C. Stick, Jr., electrical engineer, Lane-Wells Co., Los Angeles. The use of the radioactivity log in recording formation characteristics through casing is of particular value at this time. Being a relatively new art, there are many features which require explanation to obtain the most from the logs. This paper describes certain of the more important phases of its application to conditions in California. The method of operation and results obtained with the new Neutron Curve is discussed along with those of the Gamma Ray Curve.

During several years previous to 1939 the radioactive properties of strata came to be recognized as the most feasible means of determining formation characteristics through casing. In that year, radioactivity logging emerged from the realm of a strictly laboratory science with the development of a practical means for making radioactivity measurements of formations under the severe conditions imposed by oil well boreholes. The con-

YESTERDAY
Payneheat for the homes of America.
TODAY
Precision parts for the arms of Democracy.
TOMORROW
Still finer furnaces for the gas industry's post-war expansion.
PAYNEHEAT
Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

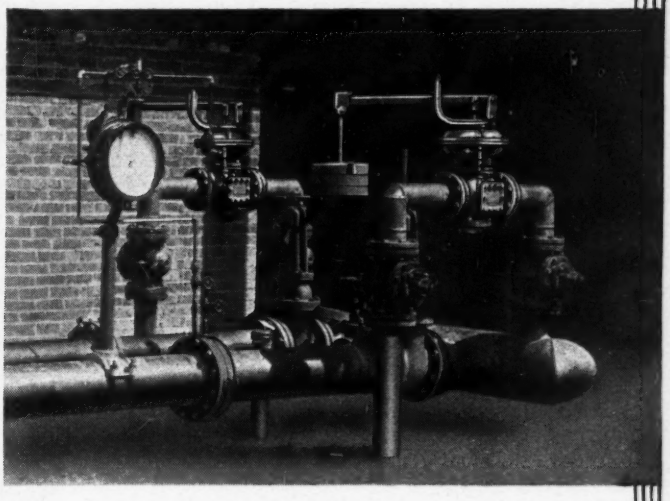
JM Johns-Manville

TRANSITE FLUE PIPE

AN ASBESTOS PRODUCT

For venting gas-burning appliances

GAS MEETS THE Challenge!



In Industry, as well as in every other phase of America's struggle, to keep America safe for Americans, gas is playing a leading role. Regardless of whether it is an unusual requirement of accurate control in heat treating or some other industrial need, REYNOLDS has the answer to Gas Control Requirements.

REYNOLDS offers greater Capacity—Increased Range—Quicker Response—all features of REYNOLDS Gas Regulators for Industrial Control. They assure smooth, constant outlet pressure and volume. Manufactured in single or double valve construction, REYNOLDS Industrial Regulators are proved by performance in factory tests and on many installations throughout the entire world.

REYNOLDS Cooperation in solving Gas Control Problems is always available. Write.

BRANCH OFFICES:

423 Dwight Building
Kansas City, Missouri

Wm. A. Ehlers
No. 268 Park Street
Upper Montclair, N. J.

REPRESENTATIVES:

Eastern Appliance Company
Boston, Massachusetts

2nd Unit, Santa Fe Bldg.
Dallas, Texas

RECOGNIZED GAS CONTROL SINCE 1892

REYNOLDS GAS REGULATOR CO.

ANDERSON, INDIANA, U. S. A.

stantly expanding use of these measurements has been the result of sound theory and practical application, and the ever-growing fund of information pertaining to the radioactive properties of formations.

Miscellaneous Papers

Weather Forecasting—Its Relation to Gas Dispatching—B. M. Laulhere, Southern California Gas Co., Los Angeles, Calif. Great strides have been made in the past decade in weather forecasting, and in the last few years in predicting localized weather conditions. While this progress has greatly assisted the gas dispatcher, much still remains to be done. It would be of invaluable help to the dispatcher to receive hourly reports from strategic locations covering his entire system, which reports should include atmospheric temperature, wind direction and velocity, rainfall, and humidity data. They should be tabulated or posted by a student of meteorology who would then make a report to the gas dispatcher as to whether any deviation from the posted forecast is to be anticipated, its extent, and its effect at various locations.—A.G.A. Natural Gas Section Convention, Dallas, Texas, May, 1941.

Co-operative Training of Technical Men — W. E. Nightingale, director of co-operative work, Northeastern University, Boston, Mass. Describes the Co-operative Plan of Education, indicates its economic and social importance, and emphasizes its immediate, particular and potential value to the gas industry. This plan differs from the usual type of college education in that the length of the course is five years instead of the usual four, with the additional year, plus part of the usual vacation periods of non-co-operative courses, devoted to carefully selected and supervised employment.—A.G.A. Joint Conference of Production and Chemical Committees, New York, N. Y., May, 1941.

Low Differential, Large Crystal Ammonium Sulphate Process — W. Tiddy, director of research, Semet-Solvay Corp., New York, N. Y. The corporation has developed a radically new type of process embodying four important principles:

1. Economical production of ammonium sulphate solution of necessary concentration for subsequent crystallization;
2. The use of a high concentration of crystal magma in the crystallization step;
3. The maintaining of crystals in circulation; and
4. Regulation of the supersaturation of the solution.

The new process involves the use of a scrubber for the recovery of ammonia from coke oven gas in which a circulating stream of ammonium sulphate containing free sulphuric acid is passed in countercurrent contact with the gas for recovery of ammonia. This stream is then pumped into a vaporizing zone where it is cooled by evaporation to a supersaturated condition. The resultant supersaturated solution then passes through a bed of crystals to cause deposition of crystals on the crystal bed. The mother liquor produced in this system flows to the mixing tank where water and sulphuric acid are added as required by the process.

Brief of Paper Entitled "Protection of Personnel and Property During the Emergency"—E. E. Ellis, Southern California Gas Co., Los Angeles, Calif. The National Emergency has brought to the utilities a very definite problem in the protection of personnel, property, and facilities. This problem resolves itself into three definite parts: *First*, an intensified safety program designed to conserve man power by reduction of job accidents; *Second*, protection of property and facilities from sabotage; *Third*, protection of property, facilities, and personnel during, and as a result of, air raids.

In discussing Part 1 of the problem, an attempt has been made to set forth the reasons why an intensified safety program is necessary, and to outline the ways in which added impetus may be given to the present program, and thus accomplish the necessary end.

Under Part 2, we are faced with a more or less new problem. For this reason the subject of sabotage has been discussed in detail. The discussion covers such points as the approach of the saboteur, and how to protect or guard against the inside dangers as well as the individual on the outside of the organization.

The subject of Protection of Property, Facilities, and Personnel during, or as a result of, an air raid, which is to be discussed in Part 3, is very broad in scope. Therefore, a general outline of the protection organization, the duties of each section and division, have been treated. No effort has been made to discuss such detailed protection as providing bomb shelters, protection from flying glass, decontamination activities, and other problems.

Test Results on the Use of Anthracite in Heavy-Oil Water-Gas Operation at the Pottsville Gas Works—L. L. Newman, C. C. Wright, and A. W. Gauger. The Pennsylvania State College Bulletin, Mineral Industries Experiment Station Bulletin 32, price 50¢. The results of test operations at the Pottsville Gas Works on a heavy-oil water-gas set using anthracite as generator fuel are presented in detail together with pertinent information regarding methods of test and a complete description of the equipment. Three anthracites of varying physical and chemical properties were tested, two of which were used both with and without reforming of heavy oil, and smooth operation with satisfactory coal and oil results were obtained.

The production capacity of the set using anthracite as generator fuel was found to approach closely the standard rating for small generators.

The percentage of steam decomposition was calculated from data secured and was found to be high. For all the tests, the steam required per M c.f. of gas was low. These favorable results are attributed to the high bulk density of the anthracite and the high heat storage capacity of anthracite fuel beds.

The quality of the gas as determined by all the standard tests was found to be satisfactory and the specific gravity was such that advantage could have been taken of the blow-run for increasing capacity had the economics been favorable. Because of the relative costs of coal and oil at Pottsville, the economics of the blow-run are decidedly unfavorable. For the same reason, the amount of reforming was kept to a minimum.

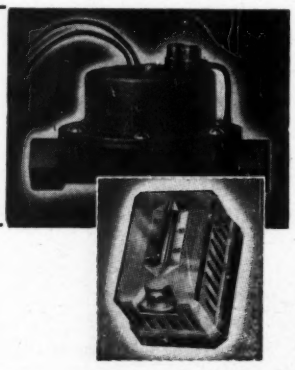
The temperatures through the set were determined and the results discussed. No difficulty was experienced in any of the tests in maintaining the necessary temperatures for efficient oil cracking.

Calculated heat balances for each of the five tests are presented and discussed. Complete American Gas Association Test Code data are shown for each of the tests.

WHEN ORDERING

Klixon Silent Gas Controls . . .

Be sure to state your preference ratings and end-use symbols. Klixon non-humming, non-chattering and non-sticking Gas Valves and snap-acting Room Thermostats are available for war orders only. And remember—the sooner the order, the sooner the delivery.



KLIXON

SPENCER THERMOSTAT CO.
803 Forest Street
Attleboro, Mass. U. S. A.

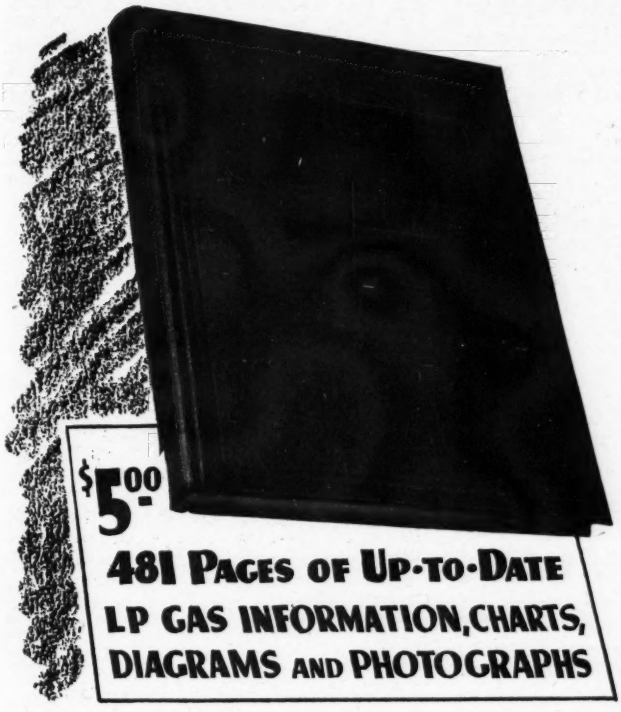
GAS—1709 W. 8th Street, Los Angeles, California

Yes! SEND ME GAS *for* 2 Years at $3.00

SUBSCRIPTION RATES: United States, Mexico, Cuba, South and Central American countries (in advance), two years $3.00; all other countries, $3.00 per year.

Name..... Position.....
Company.....
Address.....
City..... State.....
☐ Check enclosed ☐ Send bill

NOW READY- ENTIRELY NEW AND COMPLETLY REWRITTEN



The Big 3rd Edition of the HANDBOOK BUTANE-PROPANE GASES

Between the covers of this Handbook you'll find the answers . . . TODAY'S Answers . . . to every Butane-Propane question you can ask. It's your primary source of authentic, up-to-date information on all LP-Gas operations. New and completely rewritten, the THIRD Edition of the Handbook continues the basic and needed service, which former editions performed for over ten years, of providing the LP-Gas industry with an authoritative manual on all phases of LP-Gas operation.

Editorial Advisory Board

G. A. BURRELL, *Pres.*, Atlantic States Gas Co., Inc., New York, N. Y.
R. M. CONNER, *Director*, American Gas Association Testing Laboratories, Cleveland, Ohio.
ERNEST FANNIN, *Vice Pres.*, Fannin's Gas & Equipment Co., Phoenix, Ariz.
M. G. FARRAR, Carbide & Carbon Chemicals Corp., New York, N. Y.
F. R. FETHERSTON, *Sec.*, Liquefied Petroleum Gas Ass'n, New York, N. Y.
WALTER H. HOAGLAND, *Tech. Prod. Dept.*, Shell Oil Co., New York, N. Y.
A. N. KERR, *Pres.*, Imperial Gas Co., Los Angeles, Calif.
J. WOODWARD MARTIN, *Manager*, Stargas Dept., Lone Star Gas Co., Dallas, Texas.
ELLSWORTH L. MILLS, *Vice Pres.*, The Bastian-Blessing Co., Chicago, Ill.
H. E. NEWELL, *Asst. Chief Eng.*, N.B.F.U., New York, N. Y.
G. G. OBERFELL, *Vice Pres.*, Phillips Petroleum Co., Bartlesville, Okla.
C. L. PARKHILL, *Vice Pres.*, Parkhill-Wade, Los Angeles, Calif.
D. D. PURRINGTON, Standard Oil Co. of California, San Francisco, Calif.
W. S. TOPPING, *Chief Inspector*, Bureau of Explosives Ass'n of American Railroads, New York, N. Y.
J. W. VAIDEN, *Mgr., Natural Gasoline and Gas Dept., Skelly Oil Co.*, Tulsa, Okla.
H. W. WICKSTROM, *Consulting Engineer*, Los Angeles, Cal f.
LEON J. WILLIEN, *Gas Engineer*, Public Utility Engineering & Service Corp., Chicago, Ill.
R. R. WYKER, *Sales Mgr.*, Ensign Carburetor Co., Huntington Park, Calif.

CHECK THE NEW CONTENTS

PART 1. INTRODUCTION
Chapter 1: The Progress of the Industry and the History of Its Development.
Chapter 2: The ABC of LP-Gas, an Introduction to LP-Gas Operations.

PART 2. PHYSICAL AND CHEMICAL PROPERTIES
Chapter 1: Properties of the Hydrocarbons in LP-Gas.
Chapter 2: Properties of Butane-Propane Mixtures.
Chapter 3: Volume Correction Factors.
Chapter 4: Analytical Determination and Testing.

PART 3. PRODUCTION OF LP-GAS
Chapter 1: Natural Gasoline Plants, Recycling Plants, Oil Refineries.

PART 4. TRANSPORTATION AND STORAGE
Chapter 1: Delivery by Truck, Rail, Water, and Pipe Line.
Chapter 2: Storage Tank and Pressure Vessel Design.
Chapter 3: Liquid Metering and Pumping Systems.

PART 5. DISTRIBUTION OF LP-GAS
Chapter 1: Installing and Servicing LP-Gas Systems.
Chapter 2: Semi-Bulk Systems.
Chapter 3: Bottled Gas Systems.
Chapter 4: Gas Utility Service From Central Plants.
Chapter 5: Multiple Utility Service From a Central Plant.

PART 6. UTILIZATION OF LP-GAS
Chapter 1: Comparative Performance With Other Fuels.
Chapter 2: Appliance Installation and Testing.
Chapter 3: Domestic Applications.
Chapter 4: Commercial Applications.
Chapter 5: Industrial Applications.
Chapter 6: Enrichment, Peak Load and Standby Uses.
Chapter 7: A Fuel for Internal Combustion Engines.

PART 7. REGULATIONS
Section 1: N. B. F. U. Pamphlet No. 58.
Section 2: Motor Carrier Regulations.
Section 3: Freight Regulations.
Section 4: Unloading Tank Cars.
Section 5: Marine Regulations.

PART 8. APPENDIX
Section 1: Products Liability Insurance.
Section 2. Handy Tables for Field Use.
Section 3: Bibliography.
Section 4: Glossary of Terms.

CATALOGUE SECTION

Published by the Publishers of

GAS

1709 West Eighth St. Los Angeles, Calif.

We pay postage on orders accompanied by check or money order. In California add 3% for sales tax. In Canada add 10% for excise tax. **$5.00**

The Only Complete and Authoritative Reference Book on LP-Gas Engineering, Installation and Operating Methods

Construction of Guymon Carbon Black Plant Started

Construction has started on the $500,000 carbon black manufacturing plant of the Cabot Carbon Co., 2½ miles northeast of Guymon, Okla. Its construction was authorized by the Oklahoma Corporation Commission on Oct. 15. (*GAS*, Nov., 1942, p. 39.)

Capacity of another carbon black plant operating north of Guymon, owned by the General Atlas Carbon Co. is being doubled so it will utilize 3,500,000 cu. ft. of gas daily.

Both plants are located in the Texas County, Okla., section of the Hugoton gas field. They will furnish an expanded market for natural gas in the Oklahoma section of the field and will aid materially in the war production program.

■ ■

Texas Co. Granted Permit To Build Recycling Plant

Construction of a $3,000,000 recycling plant in the Louisiana Erath field by the Texas Co. has been authorized by the Louisiana department of Conservation. Work is scheduled to start immediately and it is hoped that the project will be operating by next summer.

Under the exclusive management of the Texas Co., the plant will function on a co-operative basis, drawing gas from various properties in the field.

■ ■

Rate Case Dismissed

The Federal Power Commission has terminated proceedings on rate agreements between Panhandle Eastern Pipeline Co., Michigan Gas Transmission Corp., and Northern Indiana Public Service Co. which the Public Service Commission of Indiana alleged may adversely affect rates to natural gas consumers in Fort Wayne, Bluffton, Huntington, Decatur, Columbia City, Preble, Ossian and South Whitley, Ind. The action was taken after the Indiana commission filed a motion to dismiss the case.

■ ■

Arizona Utilities Involved In Second Osborn Gas Suit

A complaint against all Arizona utilities distributing natural gas in the state was filed with the Arizona Corporation Commission on Dec. 13 by Governor Osborn. The complaint charged that the utility companies be required to pass on to the customers approximately $1,120,000 accruing from the voluntary reduction made by El Paso Natural Gas Co. in 1938 and 1940. It also asked that the El Paso Natural 24% cut ordered by the Federal Power Commission be distributed among consumers as of Nov. 1 (*GAS*, Dec., p. 25.)

■ ■

Cities Service Constructs 32 Miles of New Pipeline

The Cities Service Gas Co., is constructing 32 miles of 12-in. natural gas line from the Blackwell, Okla., compressor station on its system, to Burbank, Okla. The line will connect in the latter field with the company's gathering system.

Part of the gas transported through the line will be sold to the Phillips Petroleum Co., and the remainder will be transported to the Tallant, Okla. compressor station for delivery into the main transmission system of the Cities Service Gas Co.

Food Preparation Contest Winners Feted by Servel

THE facilities of the People's Gas Light & Coke Co., Chicago, were used for the broadcast over WLS of the national winners of the 4-H Food Preparation Contest conducted under the supervision of the National Committee on Boys and Girls Club Work and sponsored by Servel, Inc., Evansville, Ind.

The six young national winners—Ludell Anderson, 16; Phyllis Joyce Combs, 17; Ada Bliss Carter, 21; Margie Lee Duck, 19; Pauline Johnson, 17; Eileen Reiquam, 17—spoke to housewives of the Mid-West on Nov. 30 in an interview directed by Mrs. Harriet Hester of WLS. Louis Ruthenburg, president of Servel, Inc., welcomed the young contest winners to Chicago.

Each of the six national winners was given a $200 college scholarship, presented by Mr. Ruthenburg at the 4-H club banquet held in the La Salle Hotel on Dec. 2. They were also given a free trip to Chicago by Servel.

Among the representatives of the People's Gas Light & Coke Co. attending the broadcast were: F. X. Mettenet, vice president in charge of sales; Miss Karen Eladoes, director of home service; Bernard H. Wittmann, domestic sales manager; Howard D. Valentine, manager sales promotion; and Harry H. Swenson, director of displays and home planning.

Servel representatives present were: Mr. Ruthenburg; George S. Jones, Jr., vice president and general sales manager; A. E. Lee, regional manager, Chicago; Miss Frances Cowing, assistant director of home economics; and J. V. Monohan, special representative.

■ ■

Cincinnati Gas Presents Resume of War Activities

The Cincinnati Gas & Electric Co. has responded to the suggestion of Elmer Davis, chairman, Office of War Information, to "print a review of what work, sacrifice and fighting has been done by the plant and its people in the first year of war," and have prepared an interesting little booklet. It contains a well-presented resume of the company's activities in such projects as scrap collection, sale of war bonds, and civilian defense. A full roll of honor of employees in the armed services is included. The company's entire war effort is summarized in the closing sentence of the presentation, "From top to bottom we are pulling together to finish this grim job of war and finish it right."

■ ■

Service Handbook Prepared by Roper Corp.

The Geo. D. Roper Corp., Rockford, Ill., has prepared a well-illustrated handbook for Roper gas range servicemen to simplify their task, especially in wartime. It is designed to assist the servicemen "on the firing line" in serving the customers and properly maintaining their gas appliances for the duration.

The principal purpose of this manual is to describe by pictures and words the best procedure for repairing operating features of ranges, thus assuring them of lasting at least until the year's end.

■ ■

New Shallow Gas Field

The Phillips Petroleum Co., Bartlesville, Okla., has opened a shallow natural gas field near Checotah, McIntosh county, Okla., and plans to drill three more wells in the area providing authority can be secured.

The company's No. 1 well in the area was drilled to the dry Wilcox sand at 2983 ft. and gauged 3,400,000 cu. ft. per day.

SEMET-SOLVAY ENGINEERING CORPORATION

Blue Gas Plants	Gas Purifiers
Water Gas Machines	Condensers
Washer Coolers	Waste Heat Boilers
Naphthalene Scrubbers	Producer Gas Plants

40 RECTOR STREET, NEW YORK, N. Y.

BUTANE-PROPANE *News*—1709 West Eighth St., Los Angeles, Calif.

Keep abreast of the fast-growing L. P.-GAS Industry!
Enter my subscription to start at once.

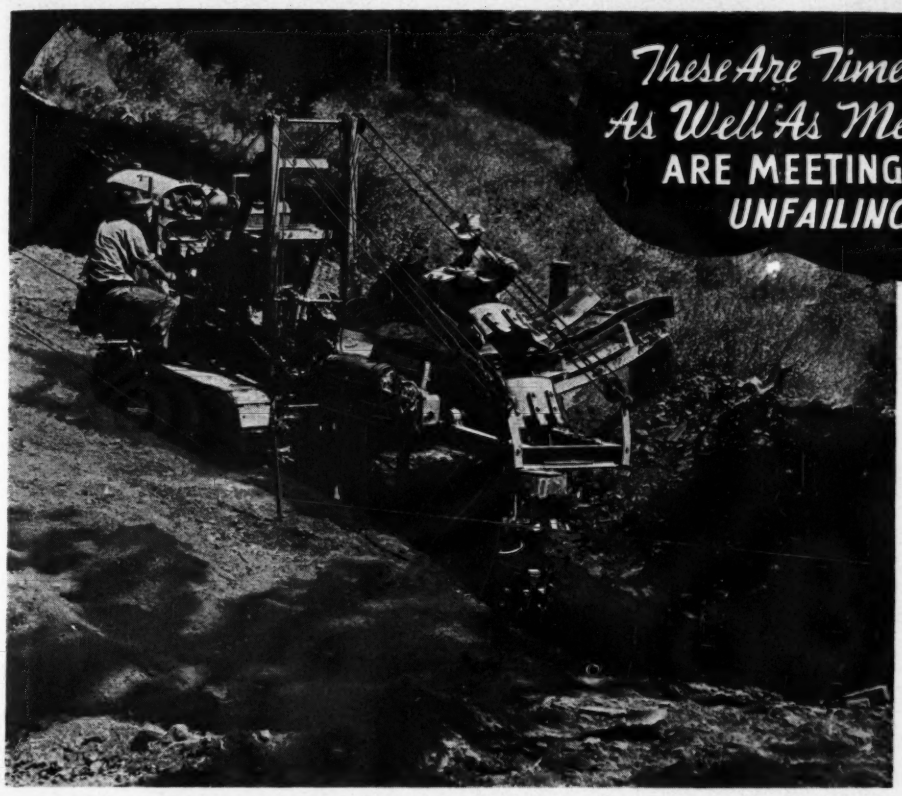
BUTANE-PROPANE *News*

for 3 Years at $2.50

SUBSCRIPTION RATES: United States, Mexico, Cuba, South and Central American countries (in advance), three years $2.50; all other countries, $3.00 per year.

Name.....Position.....
Company.....
Address.....
City.....State.....

☐ Check enclosed ☐ Send bill



These Are Times That Test Machines As Well As Men— **"CLEVELANDS"**
ARE MEETING THE TESTS WITH
UNFAILING PERFORMANCE

For fast, safe, uninterrupted distribution of Gas, one of the essential war fuels, you can't beat pipe lines.

And for digging the pipe line trenches you can't beat "CLEVELANDS."

Tested on thousands of feet of trench, in all types of soil and over the toughest terrains, "CLEVELANDS" are delivering maximum trench footage, day after day, with minimum of slow downs.

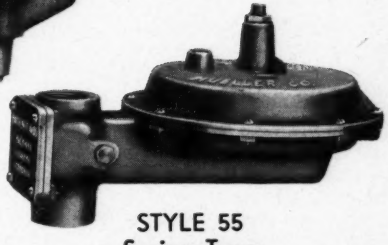
Today "CLEVELANDS" because of their correct, compact design, sturdy construction, power, speed, maneuverability and economy of operation are "in the thick of it" on many U. S. government and war emergency pipe line projects.

THE CLEVELAND TRENCHER COMPANY
20100 ST. CLAIR AVE. *"Pioneer of the Small Trencher"* CLEVELAND, OHIO
"CLEVELANDS" Save More . . . Because they Do More

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

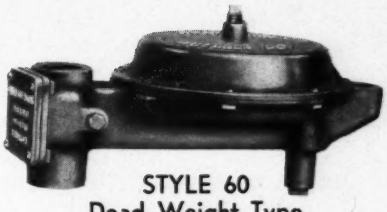
DEPENDABLE ACTION

STYLE 50
Spring Type With
Mercury Seal

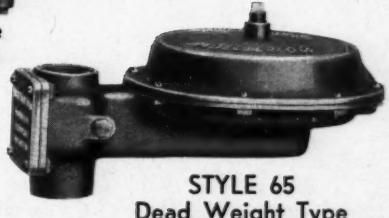


STYLE 55
Spring Type
Without Seal

Here is a regulator you can install and forget. Day and night it continues to deliver a smooth, even flow of gas at the desired volume regardless of the fluctuations in the inlet pressure. A MUELLER Regulator on the job scarcely ever needs any attention. Built to scientific standards, they perform the way you gas men want them to.



STYLE 60
Dead Weight Type
With Mercury Seal

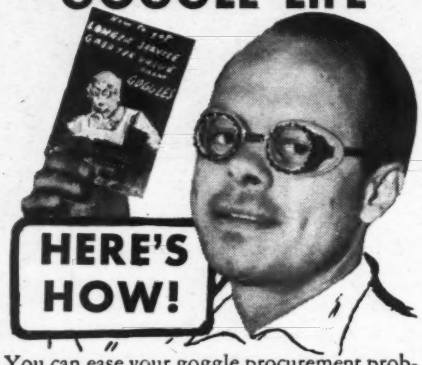


STYLE 65
Dead Weight Type
Without Seal

Mueller regulators come in a variety of sizes and designs—both spring and dead weight type—to fit every pressure control need. Models 50 and 60 shown here have mercury seals. The other two come without seal, but a dead weight or mercury seal may be included in the line if desired. Guaranteed to do the work for which they are recommended, they give long term economy. Gas men everywhere prefer MUELLER Regulators. For complete information write Dept. G-16.

Los Angeles, Calif. **MUELLER CO.** *Decatur, Ill.*

CARE LENGTHENS GOGGLE LIFE



You can ease your goggle procurement problems and lower goggle costs by giving attention to a few, easy-to-use items for maintenance. As headquarters for "Everything in Safety," Bullard offers these ideas in an illustrated booklet, "How to get Longer Service and Greater Value from Goggles." Free. Send for your copy!

E. D. BULLARD COMPANY
275 Eighth Street
San Francisco, California.
Everything BULLARD in Safety

Please send me illustrated booklet, "How to get Longer Service and Greater Value from Goggles."

Name _____ G
Company _____
Address _____
City _____ *State* _____ 1B-14

NATIONWIDE SALES AND STOCKS

The New

RATING ¼ H. P.
APPROVED

850 BASO SWITCH
Provides
COMPACTNESS
RAPID TIMING
GREAT FLEXIBILITY

Milwaukee Gas Specialty Company
MILWAUKEE WISCONSIN

PRODUCTS

Attachment for Extinguishers

Pyrene Manufacturing Co., Newark, N. J.

Model: "Thumb-Spray" Attachment for Extinguishers.

Application: This new "thumb-spray" nozzle attachment can be clamped over the ⅜-in. hose and nozzle of any standard soda-acid, foam, gas cartridge or pump tank fire extinguisher and thus convert it to wartime needs. Most standard fire extinguishers discharge only a solid stream, and since fires by bombs often require a spray as well as a solid stream, this nozzle makes the wartime changeover rapidly accomplished.

Description: The attachment is made of spring steel with a deflector edge which influences the range and distribution of the spray for maximum effectiveness. It is attached to the standard equipment by sliding the welded clamp over the hose and ferrule of the extinguisher until the end of the "thumb-spray" extends 1½ in. from the end of the nozzle. A nut and bolt hold it permanently in position.

■ ■

Two-Pen Flow Recorders

Cochrane Corp., 17th and Allegheny Ave., Philadelphia.

Model: Two Pen Flow Recorders.

Application: Where panel space is at a premium, or where it is desired to have two related flow records on the same chart of ready comparison, the new two-pen Cochrane electric flow meter achieves the results without loss of accessibility.

Description: Both receiver mechanisms can be swung out and operate in the swung-out position. The connection between the rear receiving mechanism and its pen arm must necessarily be detachable and is arranged with a self-aligning V-notch junction. A clearly visible red target moves to right or left from the center point on the scale and thus shows at a glance whether there is an excess or deficiency of one of the quantities with respect to the other. The pointer movement is 2½ times greater than the difference between the two recording pens and is thus more readily noted.

■ ■

Fire Extinguisher

American-LaFrance-Foamite Corp., Elmira, N. Y.

Model: Pump Tank Fire Extinguisher.

Description: This new pump tank, particularly adaptable for use on incendiary bomb fires, produces a straight stream and not a spray. The new pump tank is made in 5-gal. and 2½-gal. sizes. It has an oversized air chamber, assuring minimum pulsation, steady pressure and a more constant stream. It has a range of 30 to 40 ft. It is a self-contained unit and can be readily transported up ladders, over roofs and to points difficult of access.

It is equipped with a standard 26-in. hose and its interior has a corrosion-resisting coating. The outside finish is of red enamel, also designed to repel corrosion and make its identity immediate.

■ ■

Respirator

Mine Safety Appliances Co., Pittsburgh, Pa.

Model: M. S. A. Comfo Respirator.

Description: To save metal for war production, the M. S. A. Comfo Dust Respirator has been re-designed with filter cases of black plastic. The new filter container units are thinner, with rounded edges, permitting even better sidewise and downward vision.

The re-designed plastic filter cases have high impact strength with no electrical conductivity. They are not affected by perspiration and do not interfere with goggles and headgear.

This plastic model has twin side-placed replaceable filters of unusually large area.

■ ■

Fire Blanket

C. Walker Jones Co., East Germantown, Philadelphia.

Model: Jomac Fire Blanket.

Description: This is a specially built, flexible blanket that is claimed to be 100% flameproof, regardless of the intensity of the fire. These blankets are available in attractive, flame-proof containers that may be hung on the wall beside fire extinguishers, in first-aid stations, or in the equipment provided for air-raid wardens, thus making available on-the-spot protection wherever there is danger of a workman's clothes being ignited.

Catalogs

• Clark Bros. Co., Inc., Olean, N. Y., manufacturers of engines and compressors, have issued a booklet entitled "Maintenance Hints for Clark 'Angle' Super Two-Cycle Engine-Driven Compressors," which briefly considers in a conveniently arranged form the proper maintenance of the Clark unit with information as to when it should be done and those troubles operators sometimes encounter, together with solutions. Included also in the eight-page booklet are a series of 23 "do's" and "don'ts" to guide the plant engineer and maintenance man in reducing operating and maintenance cost.

• Cochrane Corp., 17th and Allegheny Ave., Philadelphia, Pa., is presenting a new edition of its complete line of flow meters in a catalog containing 56 pages. Besides describing electric, mechanical, linameter (area), ring balance, liquid level and weir meters, the catalog also covers the new two-pen electric flow recorder with ratio indicating pointer, an improved low pressure (1 to 10 in. water differential) electric type meter, and the ultra high pressure (6000 p. s. i.) ring balance meter.

COMPUTING THE GAS FLOW OF ORIFICES IS

FAST • ACCURATE • EASY

with the new W. B. P. Gas Flow Orifice Calculator

- **Save Up to One-half Usual Time**
- **Eliminate All Possibility of Error**
- **No Calculations . . . No References**
- **Set the Scales . . . Read the Answer**

INVALUABLE to engineers and shop men alike . . . all utility industrial gas salesmen, industrial service engineers, domestic appliance service departments, gas appliance and equipment manufacturers, and all others who have occasion to check or determine orifice sizes for natural, manufactured, or liquefied petroleum gases.

For fast and accurate checking of all factors relative to orifice sizing . . . B. t. u.'s per hour, cu. ft. per hour, gas pressures, drill sizes, etc. Calibrated for orifice coefficients from .6 to 1; gas pressures from .5 to 15 ins. of water; specific gravities from .3 to 2.0; and drill sizes from No. 75 to ½ in.

No other calculator is available to help you short-cut these important and complicated calculations. Simple to operate, it eliminates the possibilities of error inherent in pencil-and-paper computations.

Priced for quantity purchase to enable you to obtain a sufficient number for everyone in your organization concerned with orifice sizing. If for any reason you are not satisfied, you are privileged to return the orifice calculator within 10 days of purchase.

TIME saving is one of the big advantages in using the Gas Flow Orifice Calculator. In a test calculation, the computation was made first by the standard paper-and-pencil method . . . then the same computation was made with the Calculator in less than half the original time. Save man hours with the W. B. P. Gas Flow Orifice Calculator.

How Calculator Operates

To Find Drill Size

1. Rotate movable dial until specific gravity coincides with gas pressure.
2. Rotate movable segment until proper orifice coefficient coincides with desired gas quantity (cu. ft. per hr.). If orifice coefficient is not known, use 0.8.
3. Read drill size on movable dial opposite the arrow (0.8) on the orifice coefficient scale of movable segment.

To Find Cubic Feet Per Hour From B. t. u. Per Hour

1. Rotate movable segment until heating value of gas (B. t. u. per cu. ft.) coincides with gas quantity in thousands of B. t. u. per hour on quantity scale.
2. Read gas quantity in cu. ft. per hour against 1.0 (orifice coefficient scale).

To Find Quantity (Cu. ft. Per Hour) for Given Drill Size

1. Rotate movable dial until specific gravity coincides with gas pressure.
2. Rotate movable segment until arrow (0.8) on the orifice coefficient scale is opposite appropriate drill size.
3. Read quantity (cu. ft. per hr.) against appropriate orifice coefficient. If orifice coefficient is not known, use 0.8.

To Find B. t. u. Per Hour Given Cubic Feet Per Hour

1. Rotate movable segment until 1.0 on the orifice coefficient scale coincides with the gas quantity in cu. ft. per hour.
2. Read corresponding B. t. u. per hour in thousands against appropriate heating value (B. t. u. per cu. ft.).

We pay postage on orders accompanied by remittance. Add 3% sales tax on California orders; 10% excise tax on Canadian orders.

ORDER TODAY

GAS
1709 West Eighth Street
Los Angeles, Calif.

SPECIAL OFFER
25% Discount on All Orders of 25 or More

$1.00 Each

Gentlemen: Please send me.....W. B. P. Gas Flow Orifice Calculators, for which I am enclosing my check (or money order) for $.....

NAME.....

COMPANY.....

ADDRESS.....

Unique Name Plate

There's a new and unique name plate on the desk of D. A. Sillers, measurement chief, Lone Star Gas Co., Dallas, Texas. The name plate of which Mr. Sillers is justly proud was made from two pieces of plexi-glass which comprised part of the nose of one of the B-25's that bombed Tokyo with Jimmy Doolittle's famous squadron.

The souvenir, which is nine inches long and three inches high, was sent to Mr. Sillers by Lieut. N. B. McKinney, formerly meter inspector in the gas measurement department of Lone Star, who has been assigned to Patterson Field, Ohio, where some of the Tokyo bombers were reconditioned.

■ ■

Power Station to Operate On Natural Gas in Hungary

Construction has commenced on an electric power station in Hungary which will operate on natural gas. The cost of the plant to be erected at Marosvarhely will be 20,000,000 pengo. Natural gas has been proposed as a source of energy for several industrial purposes, and long-distance pipelines are under construction to facilitate its distribution. The production of crude oil continues with the help of German petroleum companies.

■ ■

Gas Appliance Chart

A comprehensive chart on the maintenance and care of commercial gas cooking equipment has been prepared by Fenton Kelsey Co., Madison, Wis. Roy E. Wright, chairman, food service equipment committee of the American Gas Association, believes that the chart will encourage food service operators to take better care of their gas equipment during the war period when new appliances cannot be bought.

■ ■

Three Miles of Hartford Pipeline Laid in 86 Days

The Hartford Gas Co., Hartford, Conn., on Nov. 18 completed the installation of a new three-mile 16-in. transfer main pipeline. The construction of the line was necessitated by the great increase in the use of gas by various war plants.

The new transfer line, which was completed in 86 days, will be used to bring direct to the Hartford production plant all coal gas received at Madison Avenue and manufactured at the Connecticut Coke Co. in New Haven, for mixing with the carburetted water gas the Hartford Gas Co. produces.

■ ■

Oklahoma Natural Gas Co. Sponsors Radio Program

Dedicated to the women of Oklahoma as a tribute to their valuable work on the home front is the new radio program, "Women Commandos," sponsored by the Oklahoma Natural Gas Co., Tulsa, Okla.

Featuring Julie Benell, the program can be heard over station WKY, Oklahoma City, at 9:30 a. m. Monday through Friday. It will bring to the "mike" for interview women in war work, mothers and wives of war heroes.

■ ■

City's Purchase of Gas Company Rejected by Vote

A plan to purchase the Council Bluffs Gas Co. by the city of Council Bluffs, Iowa, for $1,560,000 was rejected in an election by a vote of 2378 to 741.

The unfavorable vote apparently gives ownership of the company to John Nuveen, Jr., Chicago, recent purchaser of the company.

Nuveen bought the company for $1,350,000. The deal had been placed before the Securities Exchange Commission in Philadelphia. Purchase by the Chicago man was contingent upon the referendum.

Ranney Drilling Experiment To Begin In Pennsylvania

THE first commercial-scale installation of the Ranney method of combination mining and drilling, with the drilling to be done horizontally, will soon begin in Pennsylvania. This experiment will be much in advance of anything yet done, according to the Independent Petroleum Association of America.

The method to be used will combine the sinking of a shaft to the oil sand and the drilling of horizontal wells into the sand by means of special equipment devised in recent years and has been given preliminary testing in southeastern Ohio. Some 16 Pennsylvania and New York oil producing companies and individuals are stockholders in the Venango Development Corp., recently organized to install and operate this form of mining.

Leo Ranney, mining and petroleum engineer who designed and patented the equipment for drilling oil wells horizontally, is the technical advisor to the company. The Pennsylvania test will be made in Venango county near Franklin. This shaft has been dug to the oil sand to a depth of about 400 ft. The pattern of wells from the bottom of the shaft, when completed, will be that of the spokes of a wheel and the penetration into the sand of each horizontal well can be carried out hundreds of feet, states Mr. Ranney.

This type of undertaking is applicable to production of gas or water as well as oil.

■ ■

Pipeline Laid to Serve Oklahoma Naval Base

A temporary certificate was issued Dec. 12 by FPC to the Consolidated Gas Utilities Corp., with principal offices in Oklahoma City, authorizing the construction and operation of a 6-in. pipeline extending 17½ miles from the company's existing pipeline in Custer County, Okla., to serve a naval establishment.

The company has been granted a project preference rating for the pipe and other materials necessary to construct the line. The authorization is for a period of five years or for the duration of the national emergency, whichever is longer, and provides that construction must be commenced by Dec. 15, 1942, and completed by Jan. 15, 1943, unless modified by further commission order.

■ ■

Oklahoma Proration Order Goes Into Effect on Gas

Oklahoma State-regulated production from the gas fields of West Cement, Chickasha and East Cement went into effect on Jan. 1. This is the first proration order on large gas fields and the details have yet to be completely determined. The order, as it stands now, provides that each month it will be reviewed before the commission to determine how much gas each well will be permitted to produce.

No effort will be made by the commission to fix the price of gas at the well and a technical formula for determining the amount to be produced by each well has been agreed upon.

■ ■

Post Tells Natural Gas Story

Paul Wellman's story, "Bubble Beneath the Plain," in the *Saturday Evening Post* for Dec. 12 on page 20 is an interesting and dramatic presentation of the development of the natural gas industry.

WANTED

Gas Holders, Pumps,
Condensers, Coolers, Tanks,
Boilers, Buildings,
Pipe, etc.

Jos. Greenspon's Son Pipe Corp.

National Stock Yards
(St. Clair County), Illinois

GEORGE A. BURRELL

Consulting
Gas Engineer

■

Suite 1909
20 Pine St.
New York City

1936-42 5th Ave.
Pittsburgh, Pa.

SHUTS-OFF the GAS
before dangerous water temperature is reached!

Kitson "Defender" Emergency Shut-off Gas Valve

Type IHF

This Kitson Type IHF Valve anticipates trouble; guards against possible "sticky" thermostats; gives positive protection until the fault is remedied. It's specified by many leading gas companies as standard equipment—is A.G.A. approved. ASK ABOUT IT; WRITE TODAY.

★

Positively Prevents Overheating of Gas Water Heater Tanks!

KITSON COMPANY
1500 Walnut St., Philadelphia, Pa.
Subsidiary of the Welsbach Engineering and Management Corporation